news • developments • research • significant articles • statistics • personalities • features

The·Northwestern·Miller

MILLING PRODUCTION SECTION

DECEMBER 11, 1945

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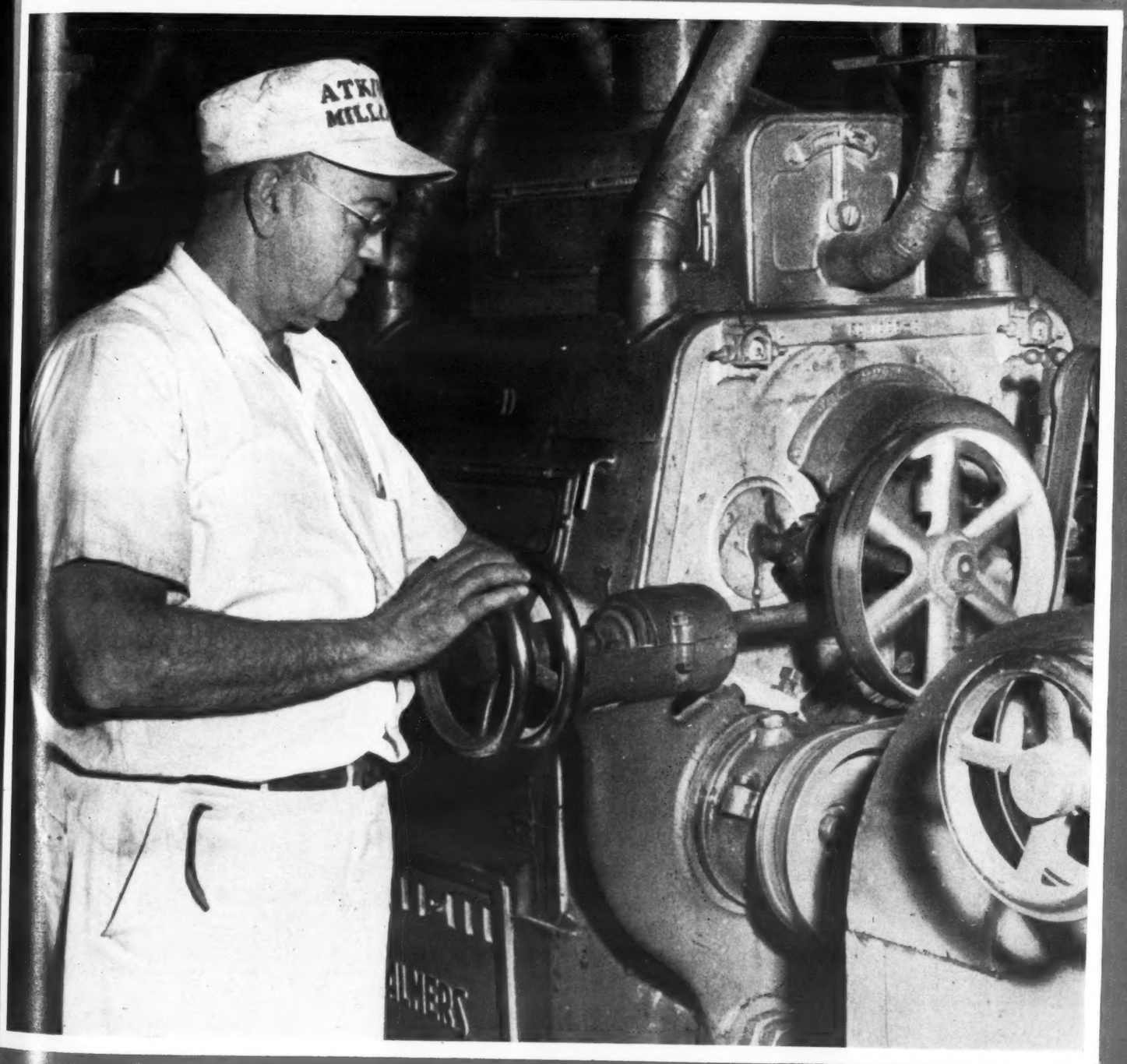
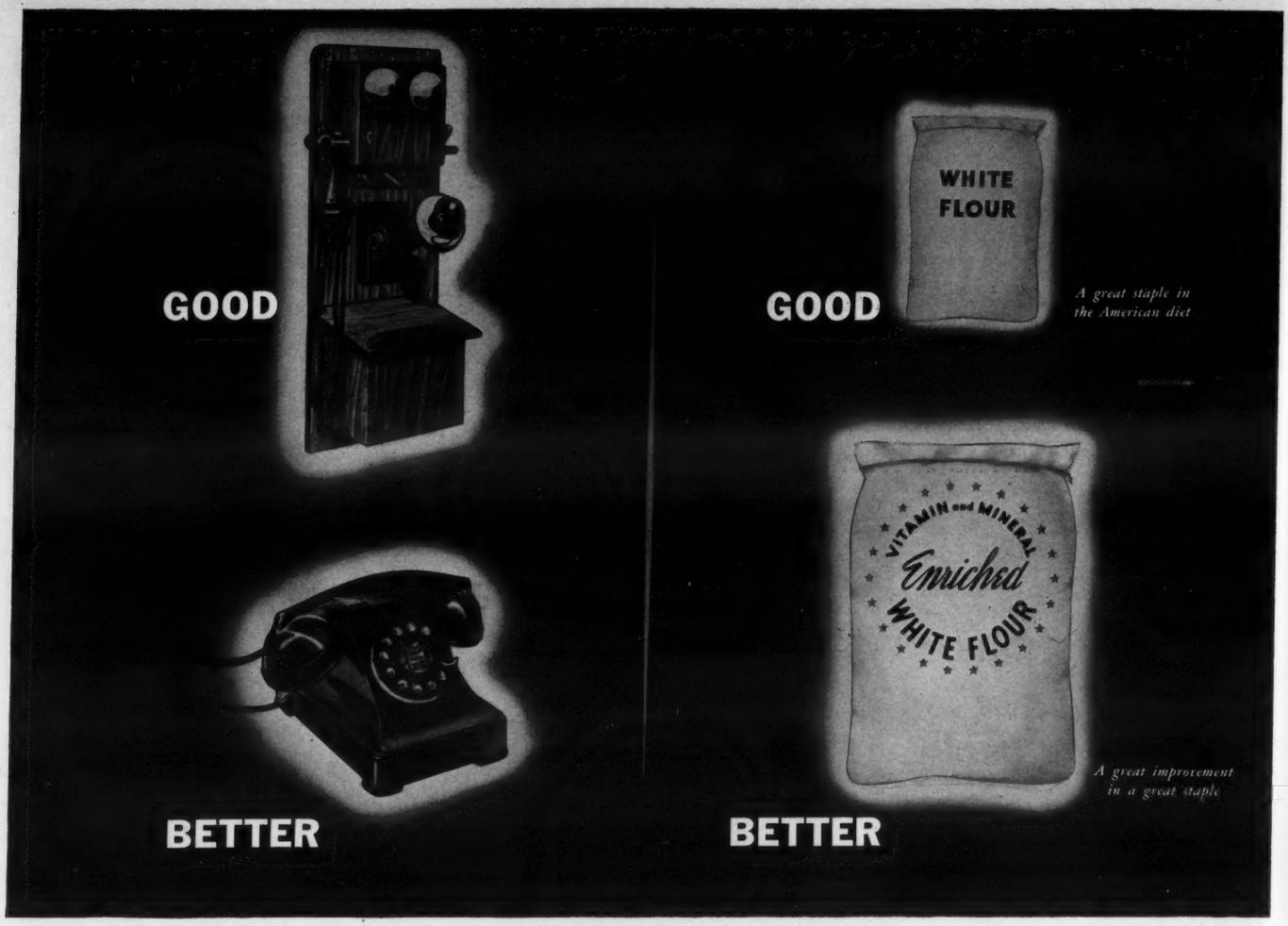
IN TWO SECTIONS—SECTION TWO





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A Progress Report on Perennial Wheat

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

American Plant Breeders Have Been Experimenting for More than 15 Years With Wheat and Wheatgrass Hybrids

CROSSING of wheat and wheatgrass has been a subject of interest among plant breeders for more than a quarter of a century. The much publicized objective has been the development of a perennial wheat; however, of equal or greater importance is the development of new gene combinations in strains of wheat or of wheatgrass which would make the present species of wheat of greater economic value.

P. Hillman, a German plant breeder, reported on a hybrid made in 1903 between wheat and wheatgrass. It is improbable that a cross was achieved in this instance, and, as John Percival cautioned, "further evidence is necessary before the hybridization of these plants can be accepted."

Successful hybrids between wheat and wheatgrass were obtained in Russia in 1930 by N. B. Zizine, (often transliterated as Tzitzin). Plant breeders in Canada and the United States made their first fertile hybrids in 1935. J. M. Armstrong, a Canadian scientist, described his results in the Canadian Journal of Research in 1936 and H. N. Vinall and M. A. Hein, writing in the U. S. Department of Agriculture Yearbook for 1937, described similar crosses that had been made in the United States.

Wheatgrass Is Perennial Parent

Species of wheatgrass are perennial. Single plants live for several years and one seeding will persist in much the same manner as alfalfa or bluegrass. D. C. Smith reported on a cross between wheat and two species of wheatgrass — western and slender—in an article published in the Journal of Agricultural Research in 1942. Another Canadian plant breeder, L. P. V. Johnson, reported on similar crosses made in Canada in an article in the Canadian Journal of Research. No seeds from the hybrid were obtained in any of the above-mentioned crosses.

All species of wheat are annual or winter annual in growth habit. By hybridizing these, new types of grasses might be produced. The possible types are (1) a long-lived wheat-like plant that would yield a harvest of grain in consecutive years from one sowing; (2) a dual-purpose type yielding some grain and suitable forage, and (3) a forage type might be developed with seeds larger than those of the common grasses.

Furthermore, resistance to diseases, insects, drouth, winterkilling and other hazards might be introduced into the annual wheat and make it a more dependable crop for grain or pasture. Species of wheatgrass furnish a valuable new source of such characters. Thus the possibilities in these hybrids have lured plant breeders. Now, after more than a decade of work in the United States and Canada and 15 years of work in Russia, it has been established that crosses can be made which will produce seed, that a large variety of types can be obtained from which selections may be made, and that wheat and wheatgrass characters can be combined in variable amounts.

No Commercial Varieties Yet

Thus far, no varieties of commercial value have been produced from these crosses, save for the possibility of such in Russia. There appear to be several reasons for this: (1) Crosses of these genera are difficult to make and the number of crossed seeds has been relatively small; (2) sterility is high in the hybrids, requiring backcrossing to the parents or chromosome doubling in the hybrids to maintain the lines in many cases; (3) a period of 10 to 15 years is too short for practical results, considering the relative dissimilarity and apparent incompatibility of the parental forms.

D. C. Smith, in a recent article published in the Journal of Agricultural Research, cited 25 published reports of results from crosses of wheat and wheatgrass. Mr. Smith's citations were carefully chosen and represent the most valuable and authentic discussions of crossing work up to 1942. Eleven other reports are mentioned in an article written by Mr. Johnson and by J. M. Armstrong and H. A. McLennan and published in Scientific Agriculture.

A Much Publicized Project

Numerous articles have appeared from time to time in popular magazines and in the newspapers. Fact and fancy have been dealt with quite freely in those popular articles. Approximately a year ago, M. A. McCall, chief of the division of cereal crops and diseases of the U. S. Department of Agriculture's bureau of plant industry, was the author of an article that appeared in The Country Gentlemen. Mr. McCall gave the basis for hope of success in crossbreeding wheat and wheatgrass, but he clearly listed the difficulties to be overcome by plant breeders before a perennial wheat would be a practical crop in the great wheat belt of North America. He said that ecological factors, such as moisture and plant nutrients, would be important limiting factors.

Two species of wheatgrass have been successfully hybridized with wheats in Russia, Canada and the United States. A large number of crosses involving other species have been attempted either with no results, or with results varying from slight ovary stimulation and formation of seeds without germs, to apparently normal seed producing defective seedlings. Varieties of wheat and of wheatgrass often exhibit differential degrees of crossability, hence the use of other varieties might bring success. The difficulties

(Continued on page 16a.)

Editor's Note: Reports published during the past two or three years, telling of the development of a perennial wheat by Russian plant breeders, have stimulated interest in the possibilities of such a hybrid being produced in the United States.

The accompanying article, adapted from a report, "New Combinations of Genes in Wheat x Wheatgrass Hybrids" which was published in the Transactions of the Kansas Academy of Science, tells of the progress that has been made in this country. The article was written by L. P. Reitz, C. O. Johnston and K. L. Anderson, all members of the Kansas Agricultural Experiment Station staff. Mr. Reitz is a plant breeder specializing in grain crops; Mr. Johnston is a plant pathologist with the U. S. Department of Agriculture; and Mr. Anderson is a specialist in grasses and other forage crops. The editors of this journal are indebted to Dr. Robert Taft, University of Kansas, editor of the Transactions of the Kansas Academy of Science; and to Dr. M. A. McCall of the bureau of plant industry, U. S. Department of Agriculture, for permission to adapt the article for publication here.

Fig. 1—Shown above are spike types of wheat and wheatgrass hybrids. The spike on the left is one species of wheatgrass (Agropyron trichophorum); the spike on the extreme right is common wheat. Those in between are different types obtained in crosses of the two plants.

Fig. 2.—The spike types of hybrids obtained in crossing another species of wheatgrass, Agropyron Elongatum, with common hard winter wheat are illustrated above. The head or spike on the left is the wheatgrass parent; that on the extreme right is the wheat parent. The resulting hybrids are between the two extremes.

Germany's Milling Industry Today

By J. F. Lockwood

Technical Director, Henry Simon, Ltd.

THE photographs on the opposite page, which I took during a recent visit to Germany, show typical instances of destruction among German flour mills, and they describe the general state of the German flour milling industry at least as strikingly as any words that I could use.

The over-all loss of milling capacity now appears to lie between 55% and 60%, but the national output is being continually increased by means of improvised milling plants consisting of hammermills and second-hand roller mills. One or two of the illustrations show work in progress on the clearing of debris, but so far there has been no serious attempt to rebuild the shattered mills on orthodox lines, and any such program of genuine reconstruction will occupy a very long period.

Since V-E Day the conditions in Germany have changed a good deal, some for the worse and others for the better. For the visitor they are much improved, and everywhere that I stayed on my last visit I was able to find a room with glass in the windows and to sleep in a bed with sheets. The only real discomfort was in Berlin, where it was bitterly cold and there was no heating of any kind. The German citizen can now move around to some extent, though with a good deal of difficulty; there are a few busses and quite a number of trains, though the trains mostly consist of boxcars in which the passengers either stand up or sit on the floor. Most of the Berlin underground railway is now working, and the number of tramcars is astonishing when one recalls the devastation of last May, when it seemed as though they would never run again. It still looks as though the clearing of debris and the erection of new buildings will take about 20 years. Priority is being given to the repairing of houses that are repairable, but there are very few of them.

There are now more than 300,000 people living in Cologne compared with 60,000 last May; the streets have become as crowded as those of many English cities, and the difference is startling in comparison with the lifeless devastation that I remember from a previous visit. The people are still living almost entirely in cellars, and the medical authorities say that their cleanliness under such conditions is remarkable: they catch rain water in buckets and use it for about five different purposes before throwing it away.

A few shops and cafes are now open, but the most surprising thing was to find that in Berlin, that city of death, the Femina night club is in full swing. It is run by Germans and patronized by the allied armies, and inside one can find high Russian officers, American G.I.'s, and officers and men of every allied nationality mixing with German civilians. I was able to help five RAF sergeants who had just arrived for their first visit and had been charged $25 for drinks; they only had $15 among them, but I advised them to pay the rest with a packet of 10 cigarettes. The laws of supply and demand are working freely and effectively in Germany at present, and cigarettes are worth about $10 for 20; on the other hand the German gin industry is kept exclusively employed in producing gin for the army at about 25c a bottle.

I found that the Park Hotel in Düsseldorf, which has been repaired by the army, offers a degree of luxury unknown in Britain today; they have a large staff of German servants and the service is excellent. But the gayest city in Germany today is Hamburg. A large part of the city near the Alster Lake escaped destruction and the very fine Atlantic Hotel has been taken over for the use of army officers. I met a number of war correspondents there—French, British, American and other nationalities—who were covering the Belsen trial and were staying in Hamburg because it is convenient to Luneburg; the chief witnesses for the prosecution were there as well.

After visiting the headquarters of the British Army of the Rhine I went down to Bonn with Captain Willis, who accompanied me throughout my trip. Captain Willis, who was with Spillers, Ltd., before the war, is now milling advisor to B.A.O.R. headquarters. I spent a few days in the North Rhineland province, where I was extremely interested to see some modern Simon roller mills being installed in a Cologne mill. They had been requisitioned by the Nazis from Henry Simon, Ltd., associated Belgian company during the war, and when I said that obviously they had simply been stolen I was at once told that the man who stole them was dead.

While in Hamburg I looked around the Blohm & Voss shipyards. They provide as good an example of precision bombing as any I have seen, and the ruin is only comparable to that of the Krupp works at Essen. In Duisburg I called at the Brabender works, where the well-known mill laboratory apparatus was made, and found Brabender himself in the midst of a conference with his staff. His men had threatened to stop work unless they were given potatoes, and Brabender was explaining that there were only two ways of giving them potatoes—the legal way, which would get them no potatoes, and the illegal way, which would get Brabender into prison.

The journey by road to Berlin was very interesting. It takes several hours to get there from the Russian frontier positions and we had to stop for lunch on the way. While we were eating it a Russian soldier appeared from nowhere and began talking Russian to me. I thought at first he was complaining because we were sitting on Russian occupied territory, but I presently realized that all he wanted was my wrist watch, and I managed to explain to him in German that I wanted it, too.

In Berlin itself co-operation between British, American, French and Russians seems quite good, and one can pass from one zone in the city to another without difficulty. The destruction is tremendous, as the photographs show, and I doubt whether there is a single Berlin house that has not been damaged in one way or another. Tanks, armored cars and smashed automobiles were lying about everywhere, and the pavements were strewn with wreckage for miles. About 25 miles outside Berlin, right out in the country, I stopped the car to photograph a roller mill lying by the roadside. It had evidently been abandoned after an attempt to take it away during the retreat.

About the Pictures

The pictures on the opposite page, illustrating the condition of many of the leading flour mills in Germany today, were taken by Mr. Lockwood, author of the accompanying descriptive article.

No. 1.—The effectiveness of the R.A.F. and U. S. Air Forces bombing with incendiary and high explosive bombs in Dusseldorf is shown in this picture of the wreckage of the Plange flour mill in that city. No. 2.—Mr. Lockwood and Capt. Willis in Berlin. The sign in the background is in Russian and directs the way to the Templehof Airdrome in Germany's capital city. No. 3.—This picture shows what now remains of the once very modern Plange mill in Wilhelmsburg, near Hamburg. No. 4.—The loading dock of the Werhahn mill at Neuss. No. 5.—The gutted Werhahn mill at Neuss is shown in the background of this picture, with the wreckage of other buildings in the foreground. No. 6.

—The Brillant mill also was a "casualty" in the bombing of Neuss. Some idea of the force of the high explosive bombs may be gained by noting the bent and curled structural steel girders. No. 7.—Workmen are shown in this picture, clearing away the debris at the wrecked Auer mill at Cologne. No. 8.—This picture shows another view of the Auer plant at Cologne. One of the walls remains standing. No. 9.—A close-up view of the Auer mill wreckage. No. 10.—An American soldier surveys the remains of the once modern Gottschalk mill at Krefeld, Germany. No. 11.—This is a picture of Berlin's famous thoroughfare, Unter den Linden, where Hitler's Nazis used to march defiantly. The wrecked tanks and lorries are evidence of the completeness of the Allies' conquest of the German capital city. No. 12.—Shown in this picture is a derelict Simon roller mill on the road approximately 25 miles from Berlin. It was left there by the retreating Nazis.

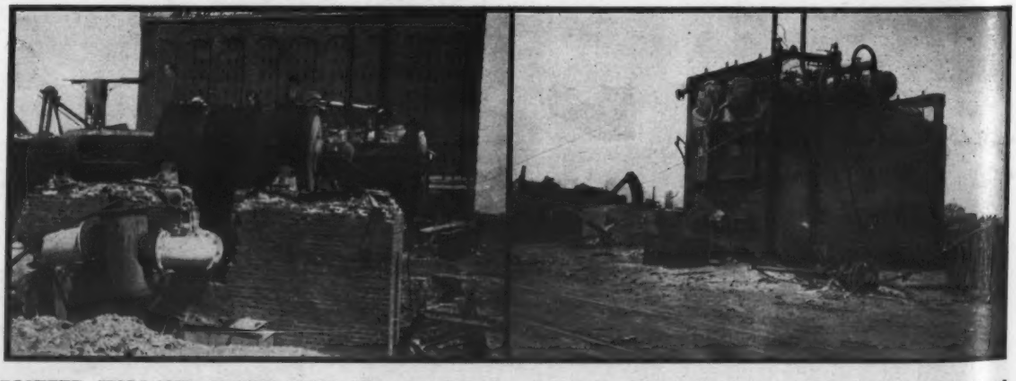
The Pacific Northwest's First Miller

By Alfred Powers

THE first flour miller in what are now the states of Oregon, Washington, Idaho, Montana, and the province of British Columbia, was white-haired, imperious Dr. John McLoughlin — very tall and looking taller still with his high beaver hat.

His main business was trading in furs. But for all that he developed a very large flour business from 1825 to 1845, while he was chief factor of the Hudson's Bay Co., Fort Vancouver, now Vancouver, Wash., the capital at that time of a wilder-

(Continued on page 6a.)



BLITZED HOLLAND FLOUR MILL—The remains of steam boilers and engine room of a flour mill at Middelburg, on the Isle of Walcheren, in Holland, are shown in the two pictures above. The wreckage was the result of the Allies' attacks for the liberation of Holland. Several other flour mills in that country were damaged by shell fire but total destruction was an exception. The pictures are by courtesy of "The Miller," London.

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Northwest's First Miller

(Continued from page 4a.)

ness empire stretching from California to the Russian possessions, from the Pacific to the Rockies.

The original primitive mill was referred to by a contemporaneous visitor as follows: ". . . a flour-mill propelled by oxen was set up behind the fort, and later grist and saw mills were erected and put in operation."

As early as 1826 he wrote to the governor and committee of the honorable company in London: " . . . from the wheat here we will be able to procure all the flour we may require after September, 1828." In 1832 he reported 3,000 bus of wheat; in 1837, 5,000 bus.

Dr. McLoughlin's early shipment of flour in 1834 to Oahu, Hawaii, did not turn out as well as he expected, because the natives proved themselves to be good traders on their own account. He sent over 50 bbls and the Hawaiians duly paid him $10 a barrel. But when he got to figuring it up for a report to the company he found he had actually got only about 20 shillings a barrel. The price had been boosted on the trade goods received in payment for the flour.

The same year, he was not too well pleased with the wheat sent to Sitka and sold there for a dollar a bushel.

Later the London agent for the Russians wanted Fort Vancouver not only to furnish flour but to supply "268 poods—about 86 cwt of White Biscuit." Dr. McLoughlin sent a sample by a ship's captain. The Russian governor tried it, found it wanting, said that kind of biscuit could be made by his own bakers at Sitka. Now if something like the sample could be made at Fort Vancouver, he was ready to buy "50 cwt." But Dr. McLoughlin's baker could not match the sample however hard he tried. So the biscuit business apparently didn't materialize.

Flour trade with Hawaii seemed to have become adjusted on a profitable basis—that is, a profitable one for the honorable Hudson's Bay Co. In July of 1845 a ship left for "Woahoo" with a cargo that included 752 bbls of flour. It was valued in the inventory at $5 a barrel. Dr. McLoughlin expected to get more for it; this valuation was "to save duties."

In the same year he was still complaining that the Russian transactions in flour were not advantageous, unless the Russians would come and get it. Said he: "as to the application of the Russians for another cargo of wheat and flour, if I was in charge I would not send it, as I consider the company loses money at 10/9 per Fanega of 126 lbs owing to the length of time the vessels take to make the voyage." In the same communication he explained: " . . . next year we will unavoidably have at least 6,000 bbls flour to send to market."

The first mill, powered by oxen, was located at the fort. The water power mill was built on Mill Creek about six miles up the river. The swift stream did its work by means of an overshot wheel. A visitor reported: "The mill has one run of stones, and is a well-built edifice. Annexed to it is the house of the miller, who is also the watchmaker of the neighborhood."

Nothing is known about the man who ran the first primitive ox-powered mill, which Dr. McLoughlin considered highly efficient in comparison with the primitive mills in California and showed that he was right by being able to manufacture flour for the country down there. Mrs. Narcissa Whitman, wife of the famous missionary, has left us an unfavorable impression of this original mill in 1836, a short time before the water-powered plant was built on Mill Creek.

"On visiting the mill did not find it in a high state of improvement. It goes by horse power, has a wire bolt. This seemed a hard way of getting bread, but better so than no bread, or to grind by hand."

By this time the grain was no longer flailed and tossed into the air so the wind could blow the chaff away, for Fort Vancouver had secured a threshing machine as early as 1833.

We know a little about the miller who ran the water-powered plant for many years. He was a Scotchman, John Stanger, age 24 when he came overland and down the Columbia in a canoe. The mill machinery followed around Cape Horn from England.

Timbers for the establishment were cut from huge firs growing near the site. These were hewed with a broad-ax and fastened together with wooden pins.

The miller did what many other Hudson's Bay Co. "servants" did—married an Indian woman, and in time — as he made hundreds upon hundreds of barrels of flour—he had seven half-breed children. It is no wonder he tinkered with watches in his spare time, for Hudson's Bay wages ordinarily ranged for £17 to £30 a year or from $85 to $150.

During his two decades as head of the Columbia department of the company, Dr. McLoughlin had built a flour mill on his own account at Oregon City and this served him well when he was eased out of his job in 1846. In that year one of his associates wrote:

"The Doctor . . . has rented his saw mills to an American for $1,000 per annum. The flour mill remains in his own hands still paying him remarkably well."

At the old Hudson's Bay site today all the vestiges that remain of this pioneer of all pioneer mills of the Pacific Northwest are a small amount of rusty machinery and an old iron pin or two. Only a little flow of water now pours down a series of cascades where formerly Mill Creek sent a heavy current upon the overshot wheel.

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Planning a Research Program

By Dr. Victor Conquest

THERE can be only one answer to the question "Do all industries need research?". The answer is an unqualified "yes." But you want to know some other answers such as "Why?", "How much and what kind of Research?", "What will it cost?" and "What will it do for me and my business?".

To set the stage properly, I must warn you that I am a salesman for research who believes in the product and has been selling it to one firm for the past 20 years. All the customer has to do is to see some samples of what research can do for him and he is a willing and eager buyer.

You ought to have a clear definition of what research is before you can tell whether you want any of it. You need to know what is meant by some of the words used to modify or more aptly describe various kinds of research. Broadly, research can be defined as an "organized search for the new and unobvious facts" about any subject or field of interest. We speak of "fundamental" or "basic" research, "academic" research, "applied" research, "engineering and developmental" research, "process" research, "analytical" research, "library" research, "sales" research, and many others. It is only when you are planning on a research program that you need to know the many types of activities that contribute to the working out and the success of the program. All the various types and shades of research are vital to the ultimate success of any program.

No Halfway Grade

Whatever the kind of research contemplated, it must be good. There is no halfway grade of research. Either it is good and produces the desired results, or it is ineffective and produces nothing. Any user of research, therefore, cannot afford to have anything less than the best, otherwise he is wasting his money and effort, and running the risk of being a dissatisfied customer, very much opposed to the idea of research because of his bad experience with it. That would be his distinct loss and possibly a loss to society in the failure to ever, or at least earlier, work out some useful results!

The going into a research program needs to be done with the certain knowledge that it will not be a year to year affair. It must be set up for continuity of effort so that those ideas and results only partly completed can be worked on without any thought of liquidation and loss merely because a certain predetermined date comes around.

Research Must Be Continuing

The industry or business supporting research must think in terms of a continuing support for a period of years.

Another consideration needed in a research program is the will and ability of its sponsors to take full advantage of the results of the program. It must be understood that sometimes this taking advantage of research results demands that old ideas, practices and many times equipment have to be discarded in favor of the new. If you are to be open-minded and progressive enough to support a research program, you must be equally progressive in your use of the results.

Before going any further in the discussion to prove that all industry needs research, let me use a comparative method to show the structure, interdependence and strength of the various kinds of research. As an easy means of explanation, let us compare research to a field plant.

Pull up a plant, shake the soil off the roots and look at it carefully. Maybe many of you have done this, and many of you know the general structure of a plant, starting with the hair roots which attach to smaller roots, then these attach to larger roots until the main root is formed. Above ground is the stem, and again branching from the stem the various branches, becoming smaller down to the leaves or seed.

Every part of that plant can be labeled in terms of some part of research activity and there is a similarity of function of each part that is not wholly accidental, but would seem to point to the necessity for organization of all parts to provide a satisfactory whole.

Suppose you consider the hair roots and smaller roots under the label of "fundamental" research. Suppose you remove them all and try to get the plant to grow again. Your plant will die unless something extra special is done to it, such as the use of root growth hormone. Now imagine that all fundamental research is removed from society, industry and colleges. It is just as sure that all the other parts of research and the

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results of it will die. There can be no more progress, no more facts on which to make progress in any direction. Certainly the plant shorn of its roots does not die instantly, nor does progress stop instantly when fundamental research stops. There is always enough life and enough accumulated facts to permit a slowly lingering atrophy and decay.

Need for Fundamental Research

Sometimes all the fundamental facts needed for the conclusion of a project are available. All that is needed is for these facts to be collected from far and near, in new or old literature, and for an expert workman, the research man, to put the pieces together to form a coherent final answer to the problem.

Too few persons and too few industries realize the vitality of all progress is in these fundamental factual research efforts. Many industrial executives say "we won't do fundamental work in our laboratories because we want 'applied research.'" They do not fully realize that without fundamental work there eventually can be no applied or practical answers.

Many smaller businesses cannot afford the expense of a fundamental research program. But that does not mean that they cannot afford to help support such a program. They have been provided with numerous ways in which they can see to it that fundamental research does go on uninterruptedly.

The first tool in their hands is that they are taxpayers and as such can insist to their employees, the state officials, state boards of regents and education, that a fair share of the taxes allocated to education is earmaked for the academic research programs that are being carried on in state supported educational institutions. Also as federal taxpayers, they can and must insist to the Congress and its committees on appropriations that sums of money be given to those federal projects that support fundamental researches. The above two actions, federal and state use of tax money for fundamental research support, must be sponsored by the business man, the industrial concerns, and the average citizen who, in the final analysis, is the beneficiary of all research.

A third tool is in the hands of all business men and industrial concerns, large or small, to assure the orderly continuance of fundamental research fact seeking. That is by the giving of grants to schools and colleges for the definite use in fundamental investigations. In this case small as well as large business ought to, and in defense of their futures, must give all the support that their balance sheets will stand. They will find as time goes on their balance sheets will be better and better as a result of the newer advances made with their money going to research. In this class of research support no company or individual can avoid his responsibility for aiding the common good and at the same time help himself. Nor does this support need to be burdensome if every person and organization does his share.

There is a fourth way that fundamental and applied research can be obtained and that is through Research Foundations such as you have recently founded here in the Midwest, and are being established in many sections of the country. Here a management of research is ready made for those who may not have the total funds necessary for their own organization and facilities. Much of the work of foundations in the past has been concerned with applied research or fitting together the existing fundamentals for a ready answer to practical problems. Supporters of these types of foundations will have to realize that here also much fundamental work must be done or else supported where the men and facilities are obtainable. Some foundations operate solely as an agency to provide research funds and distribute them to fundamental projects.

Industry Association Sponsorship

Still another way that business men and industries can support fundamental research is through their industry associations. Most of the problems and certainly all the fundamental problems within an industry group are common to all. What could be more sensible than for the industry group to support fundamental research for the common good? A small amount from each industry member would provide research support, either in the association laboratory, in the laboratories of schools and colleges throughout the country or in the laboratories of a Research Foundation.

You can see that there are so many ways that fundamental research can be supported that there is no excuse in these United States for not supporting it either directly or by insisting that your tax money support it. And let me make this point once more as strongly as I can shout. Fundamental research must be continued since it is the source of energy of all other good results, so much so that progress cannot continue for long in its absence.

Now to get at the kind of research that you are most interested in, and that is applied or practical, which in the end gives to industry what it most needs in this competitive society. Once the root system of funda-

Kitchen, courtesy of Consolidated Edison Co.

WILL THE THOUSANDS of housewives who turned to commercially baked bread during the past few years go back to home baking as they give up their jobs in war plants?

The answer will hinge to a great degree upon whether the word "ENRICHED" is featured on your sacks and packages of family flour.

For during the period since January, 1943 when War Food Order No. 1 made enrichment of bakers' white bread and rolls mandatory, the public has learned to appreciate that the word "ENRICHED" means higher value, will in fact insist upon seeing it when buying either bread or flour after wartime regulations are rescinded.

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mental research is strong, the trunk or the useful portion of the plant will be strong. All the energy of the factual research can now be applied in solving the immediate problems of new products, improved old products, new processes or improved processes.

Improvements can come from many directions and they take many forms. Available raw materials, when thoroughly known and their potentialities studied, result in their better and more valuable utilization. This is better for the producers and processors and better for society as a whole. If the utilization does not benefit society by making newer things available, or making older things available at less cost, then that utilization is not sound and will not survive.

Scope of Applied Research

In applied or practical research we see another type of expert on the scene. He must know what is wanted or he must have ideas that certain results and products will be wanted once they are known. It is up to him to pull the accumulated knowledge and the accumulated known or unknown wants together and provide the necessary answers.

Research and its activating agency, development, demand the best in teamwork, co-operation and co-ordination. Just as a successful sports team needs co-ordination and timing, so does a successful research program need it.

In rare instances one person may be a successful research man, development man and general utility expert who can play all the positions at once. For most research programs it will be found that several varieties of experts are needed, each one carrying the ball as it comes to him and seeing that it is safely in the hands of his successor in the sequence of action. All on the team must have a clear idea of the objectives and know the results of the work as it progresses.

An involved organization arrangement is to be avoided, but it is necessary that each person in a group know exactly what part of the responsibility for a given project belongs to him and to the others. Research and development organizations grow and are welded together through their continued association. No good research and development organization ever has sprung up from a wave of a wand, no matter how much backing in the form of money and facilities it might have. It takes some years of learning on the part of the team to make the team function at its best. The best organizations find or have an enthusiastic leader or spark plug who inspires the whole group and convinces them that their combination can come up with right answers to all problems.

The Importance of Leadership

Here again business and industry cannot accept any but the best in ability, keenness and persistence. Of these characteristics, persistence is by far the most valuable. If the fundamental work indicates certain truths that would seem capable of being turned into practical use, then persistence is needed to make the idea practical, and turn it into use for industry and society.

In this field of applied research we find the greatest need for wide training and experience. We need teamwork between fundamental workers and practical workers as well as teamwork within each group.

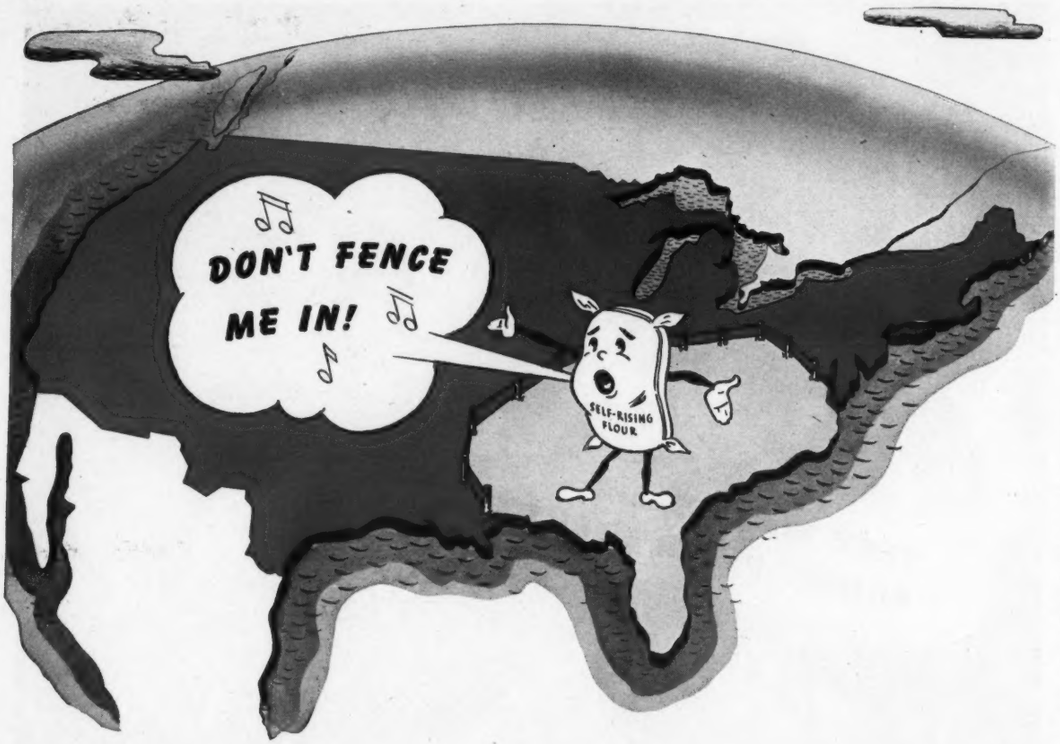
As results are obtained on a given project, it is inevitable that new truths will be discovered and that new ideas will evolve, thus setting in motion a chain reaction leading to good results. Research people call these side issues when they are not directly on the problem in work. These side issues are not usually forgotten and eventually some of them become more important and valuable than the original to business and society.

These side issues might be likened to the branches of our uprooted plant. All of the branches bear fruit, either as the finished article or in the form of newer and better ideas and endeavors. Suppose one of these branches or ideas is activated by being removed from the main stem and placed in the ground. In most cases it won't grow unless it gets some vigorous aid in the beginning. A new research project will need encouragement and support. The cut off branch of our plant will need a catalyst such as a plant hormone or unusually favorable conditions. Thus from one research, fundamental through applied, through practical usage, we get newer and better projects and results.

Yet another field of research needs some attention in the broad picture. This is the research that must be done before the business or industry can evaluate the importance of a project or product. It is the kind of research that is so often neglected, market and sales research.

You may have properly concluded from the above discussion that research is a necessary activity for industry. It is a must if industry, both large and small, is to progress to newer and better things at less cost to more people, which is the foundation of the American way of life.

You have heard that there is more than one kind of research, each just as important as the other in the final success of a research program.



Self-rising flour is big business. Millions of barrels are sold each year in the South. That's because the South has long been partial to hot biscuits, and self-rising originally was considered a biscuit flour.

But today, there no longer is any reason for confining the sale of this profitable mill specialty within a dozen or more southern states. Greener pastures beckon . . . and here is why . . .

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The introduction of V-90 changed the picture completely. Slow-acting V-90 not only makes possible the baking of lighter, more readily digested biscuits, but cakes, muffins, corn fritters, meat pies, and a host of oven delicacies to delight even the most critical housewife.

Yes, V-90 has made self-rising a truly general purpose flour . . . in so doing has expanded the potential market tremendously. Here, at last, is a flour that should find ready acceptance by housewives demanding a wide variety in home-baked oven products . . . not only in the South but in all other parts of the country as well. The growing trend to prepared mixes makes the potential even that much greater!

Proof It Can Be Done!

It can be done because it *has* been done! Already several enterprising mills have conducted test campaigns which definitely prove that V-90 self-rising flour can be sold readily and profitably in these new markets. Moreover, repeat sales clearly indicate that time-saving, money-saving self-rising flour continues in demand by these new customers.

Specific details of the results of these tests are available and will gladly be supplied upon request. Now is the time to expand the sale of *your* brands. Self-rising flour and prepared mixes offer longer profits, more opportunity for aggressive promotion. Then, too, prepared flour sales have steadily increased during the war, while consumption of plain flour has generally declined. It pays to ride a *rising* trend!

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You may have thought or guessed that a research program is expensive. It can be expensive, but it does not need to be. Some research can be supported by even a small business. There are a number of ways to do this as you have heard. The most expensive action, however, is to fail to support research. If you do not support research or cause it to be supported, the industry so failing is doomed to mediocrity and eventual stagnation, loss of profit and loss of its reason for existing.

If you think that your industry or business might use a research program, discuss the matter with a research man, preferably one who knows something about your industry. If you try to get practical guidance from anyone else, you are liable to get bad advice. When you want legal advice you see your lawyer and when you want research advice, you should see a research worker, as good a one as you can find.

A business man or an industry should approach research in the same way they would consider the establishment of a new plant or any other new activity in business. The business man wants to know if there is a reasonable chance of success and profit in the undertaking. He wants to know what it costs and how it will affect his standing in relation to competition. He needs to know and usually does know just what his problems are that research would help solve to his advantage. He wants to know what it means to him when the problems are solved successfully.

All these answers cannot be given without a survey of the question, made through his own knowledge of business and aided by the technical survey that a research man can give him.

While there needs to be an accounting practice for research, it is a very different one than accountants know about and have developed in ordinary business. Less details are needed, and the fiscal year type of accounting is entirely out of order for research. Research results take time for their accomplishment and more time for their full effects to be felt. A three- or five-year accounting period is more reasonable and practical in research accounting. Research results are cumulative and have to be accounted for on a cumulative basis over the years. The research man must insist on an accounting of his work, so that his department results can be set up for an evaluation. The many intangibles from research, as well as the easily assessed results, make research accounting a special job, not as easy as taking figures from a ledger sheet. Be sure you have a rational accounting system for research, and don't bother your research man in the least about the details of it. Show him only two figures—what it costs, and what it has meant to your business.

Once you have set up a research program, leave the running of it to those trained in research business. Too many business executives like to show their originality in directing research by helping the research group with well-meaning suggestions on details. Don't waste your time and the researchers' time in this way. You wouldn't try to tell Albert Spaulding how to play his violin, and research direction is just as specialized a vocation.

Research accounting could well be discussed at great length and probably to no good result. Briefly your research and development department is a budget department, not a profit and loss department. Keep track of what you spend and control how you spend your research money. Put the results of your research efforts into action without undue delay so that your research and development people will not become dull from feeling their work is not appreciated. If you can't take advantage of their work with reasonable speed, tell them why and explain your future program to them. They like to feel they are part of the larger team, your business.

As you find the results of a research program are paying dividends either in dollars or a better product, tell your research and development group about it. Thus your profit and loss accounting on research is one you make for your own information and the information of your group. Their enthusiasm and pride of accomplishment need a little stimulation that only you, the backer of the whole business, can give them.

Why do you think there are now over 3,000 research organizations in the country? Why are many millions of dollars spent each year on research? Why are industries, large and small, announcing plans for new and expanded research that adds up to about 600 millions for facilities alone since the first of this year? Why is there so much interest and determination in Congress to set up some sort of plan so that research started during the war need will continue in peace?

Editor's Note: The foregoing article was adapted from the text of an address made by Mr. Conquest at an industry-agriculture conference in Manhattan, Kansas, recently. Mr. Conquest is Director of Research for Armour & Co., Chicago, Ill., and is an authority in the field of industrial research.

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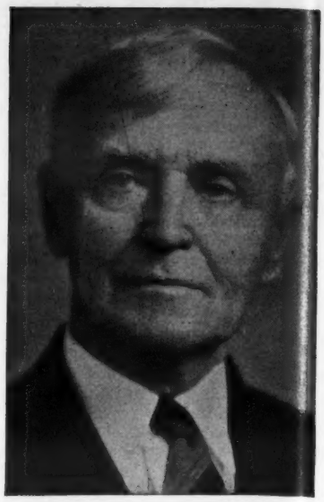


Dr. C. O. Swanson
Kansas State College

Factors That Influence Wheat Germination

DURING the time the wheat kernel develops to full maturity in the head, the rapid biological activities continue up to full maturity when the moisture content is about 35 to 40%. Then begins a slowing-down process associated with desiccation when the moisture is reduced to the level at which the biological activities are at the minimum. This reduction in moisture is necessary in order that the life in the kernel may be preserved for a considerable period of time. In this way is the primary object of the kernel accomplished, namely, to produce another plant and so perpetuate the species. Good keeping in storage is a valuable consequence.

Factors of Long and Short Dormancy

After the seeds have matured and undergone desiccation there is a period of dormancy during which germination normally does not take place. The length of the period of dormancy varies greatly among different seeds. For those which have hard seed coats, and which are more or less impervious to water and oxygen, the period is much longer than for those whose seed coat is readily permeable. Crocker, 1916. The former class of seeds retain their viability for many years, even under damp conditions such as being buried in moist soil. Many weed seeds are of this nature and this involves a serious problem in weed eradication. Some legume seeds are not readily permeable to water and hence need special treatment in order to germinate readily.

The seed coat of wheat is readily permeable to water and oxygen and hence its period of dormancy is relatively short. It seems that the length of the period of dormancy is based on habit developed to survive conditions inimical to growth and thus perpetuate the species. Weed seeds have developed the powers of resistance to conditions which are destructive to the viability of the wheat kernels. Wheat and other cereals have been cultivated by man for such a long period that left to themselves they would not survive.

Variations in Response to Moisture

As generally observed wheat heads left uncut in the field during prolonged periods of wet weather do not, as a rule, exhibit the phenomena of sprouting or germination. Kernels in wheat heads in a shock or in bundles left on the ground will sprout under similar conditions, apparently due to the ability of the wheat head to shed enough water when standing so that not enough is absorbed to start the biological process of germination. When massed in a bundle, contact with water is prolonged and more is absorbed. While the appearance of sprouting may be conspicuous, a careful examination would show that only a fraction of the kernels were sprouted.

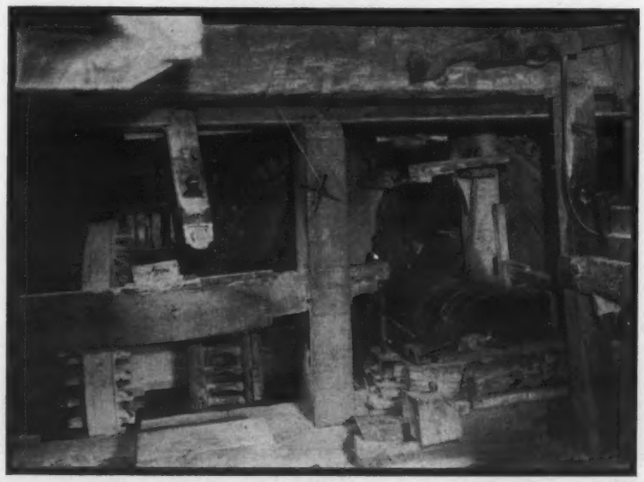
Some wheat varieties have more resistance against wet conditions than others. This variation of varieties to resist wet conditions which cause sprouting was shown in an experiment at Kansas Agricultural Experiment Station (L. P. Reitz, unpublished data). Kernels of Kawvale had been observed to sprout while in the head standing uncut in the field during periods of prolonged damp weather. Small bundles of about 100 heads were cut from a number of varieties when dead ripe, July 2 to 8, 1940. The bundles were soaked, heads down, in water for two hours, then covered with straw kept wet continually until sprouts appeared on many bundles. The wet straw was then removed, the bundles dried quickly in the sun and threshed. Samples of 500 seeds were taken from the grain of each variety and the percentage of sprouted kernels determined. A kernel was counted as sprouted when the germ had swelled sufficiently to rupture the bran covering.

Great differences were observed among the varieties ranging from a few sprouted kernels to more than 50%. Kawvale was among the highest. That this characteristic was inherited was shown in the relatively high rate of sprouting of crosses of Kawvale with varieties which had low percentages of sprouting. Among the more common varieties which had a low percentage of sprouting, were Turkey, Tenmarq, Blackhull, Cheyenne, Nebred, Oro, Clarkan and Early Blackhull. The habit of not responding immediately to conditions which cause sprouting is thus fairly common among the standard winter wheat varieties tested.

Internal Changes in the Kernels

How the baking qualities of new wheat or that recently threshed from shock or by combine improve during storage was shown in a previous article. The duration of such changes is of somewhat similar length to those which prepare the wheat kernels for a normal rate of sprouting or germination. Artificial means may be used to modify or shorten the duration of both types of changes. Under natural conditions, both types are caused by biological activities connected with the life processes in the kernels.

The changes which take place in a seed during the period of after-ripening, or between the time of cessation of growth and the time when seed manifests normal germination has been studied by plant physiologists. For seeds which have long periods of delayed germination due to seed coats which exclude water and oxygen, the first processes must increase permeability. Wheat seeds do not have such seed coats and this may be one reason for the comparatively short period of delayed germination. Eckerson (1913) observed that the reaction of parts of the embryo was slightly basic or neutral to phenolphthalein during the first part of the dormant period. As the process of after-ripening progressed the reaction became more and more acid. The first initial change was thus a small increase in acidity, and near the end of the period the rate of increase became greater. This more acid reaction seemed to produce the general physico-chemical conditions favorable for water absorption, enzyme formation and action, and through these established conditions for starting growth. The enzymes which are specifically mentioned by Howard (1915) are the oxidazes, peroxidazes, catalases, diastases, proteases and lipases.



AGED IN THE WOOD—Shown above is a picture of the main drive gears of an old all-wood flour mill in Barbour County, West Virginia. Though 150 years old, this mill still is in use grinding corn, wheat and buckwheat.

Changes Which Promote Germination

The changes which accompany natural after-ripening are associated with developing conditions which promote the starting of the new plant. Conditions which favor enzyme activity are among the most essential. The stable substances in the wheat kernel must be broken down before new cells can be constructed. These stable compounds, carbohydrates, proteins, fats, etc., stored in the wheat kernel must be reduced to such small units as can be transferred from the place of storage in the endosperm, first to the embryo where growth

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starts, and then to the place of building of roots and leaves. There must be enough material in the seed to support the building of these until they are capable of obtaining materials from the soil, water and air.

Thus it seems that there is a similarity between the naturally occurring changes in wheat which produce normal germination after the more or less dormant period and the changes which also improve the baking qualities. Both of these changes take place in the period immediately following harvest.

One of the common laboratory means of overcoming dormancy is the application of cold. Seed testing laboratories place seeds received for testing immediately after harvest between moist blotters and let them remain for about four days at about 35° F. After this treatment, normal sprouting is obtained in the germinator at 68° F.

Effect of Cool Drying

Some evidence has been obtained that pre-chilling wheat in the head increases the diastatic activity of the kernels when the cutting was made at high moisture contents. Wheat was cut at the following stages: soft dough, hard dough, tough, and hard. One set of bundles was dried in the sun and one set in a cool room kept at about 50° F. The diastatic activities obtained on the wheat meal are given in Table 1. (Swanson, 1936).

Table 1.—Increase in Diastatic Activity as a Result of Drying Wheat Bundles at About 50° F.

Moisture when cut	Milligrams maltose		
	dried in the sun	dried in cool room	Increase
%			
41	298	420	122
35	278	674	396
29	340	602	262
13	246	280	34

The large increase in diastatic activity of the wheat cut at 35 and 29% moisture is notable.

Following the changes incident to dormancy, viability remains stationary for a considerable period. The duration depends mostly on the temperature and moisture conditions. A sample of hard red spring wheat was kept by Stockham (1920) in an elevator in North Dakota for nine years during which time periodic tests were made for viability. At the end of two years, the viability was 96%, and after nine years it was only 45%. A sample of hard red winter wheat stored for 11 years in a farmer's bin in northwest Kansas showed 53% viability (Swanson, 1939). The cool and relatively dry atmosphere was a factor in prolonging the vitality. Wheat stored for 10 years under ordinary conditions in Colorado, decreased only 7% in viability (Robertson and Lute, 1933). Spring wheat obtained from the crops of 1901 and 1902 (Sifton, 1920), grown in representative provinces in Canada, had an average germination of 99% up to five years. After 10 years it was 92%, 12 years 69%, 14 years 28%, 16 years 5%, and 18 years 0%. Thus, after 12 years, the rate of decrease in viability was rapid. Under warm conditions, the period of viability is much shorter (Swanson, 1937). Seeds stored in the laboratory at Manhattan, Kansas, failed to sprout after six years.

There is considerable variation in temperature at which wheat will germinate. Taug (1931) covered seeds with a nutrient solution 2 c.c. deep (nearly one inch) and varied the temperatures from 12° to 45°. Air was bubbled in at varying rates but beyond three to six liters per day had value. Wheat seeds in general produced higher percentages of germination at higher temperatures until a maximum was reached, after which still higher temperatures gave lower percentages. With low temperatures, a longer time was needed to obtain optimum germination. Under the best of environment, 92 to 95% of the seeds germinated in 24 hours. Germination was considered to have taken place when the seed coat had been ruptured and the white coleoptile (embryo leaf covering) was visible through the opening. Any temperature between 50° and 77° F. might be expected to give complete germination in wheat seeds, but 68° F. may be regarded as the optimum.

The process of germination is slower at lower temperature and more rapid at the higher temperature, according to Kneen (1944) who found that it took about twice as long to obtain comparative lengths of sprouts at 57.2° F. as at 75.2° F. (24° C.).

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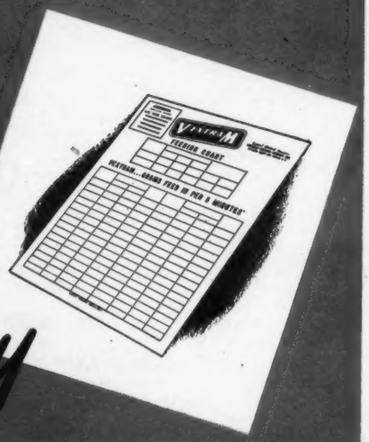

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Some Do's and Don'ts for Using DDT

THE Department of Agriculture has issued a number of suggestions regarding the use of DDT by civilians because of the wide interest which has developed in its possible use as an insecticide now that limited quantities are available for agricultural and civilian purposes.

The knowledge of practical uses of DDT insecticide in agriculture, buildings and around the home is still far from complete, although under the direction of trained personnel employing formulations that had been proved for specific purposes under various conditions, the insecticide has proved useful, according to the bureau of entomology and plant quarantine.

The Agricultural Research Foundation recently issued a statement, saying that:

"The bureau of entomology and plant quarantine, in co-operation with various state agricultural experiment stations and other agencies, has conducted many and extensive tests with DDT during the past two and one half years. These have included investigations of the possible usefulness of DDT insecticides against many insect pests on a great variety of crops and animals, and in buildings. The results of many of the preliminary small scale experiments are already available, but the outcome of more extensive tests being conducted this year is still to be determined. Information at hand indicates that for certain purposes and under certain conditions the effective and safe use of DDT by civilians at this time is possible.

"DDT is suitable for use as an insecticide only when properly prepared. It is not easy to formulate an insecticidal dust from technical grade DDT. However, many manufacturing concerns are equipped to grind it with talcs, clays, sulfur, or other materials into fine powders that contain DDT in various strengths. Such mixtures will be available for dusting. With the addition of a wetting agent these powders may also be mixed with water for use as sprays. DDT is only very slightly soluble in water, but it can be dissolved in various petroleum oils, xylene, or other solvents for making spray solutions or emulsions.

"Only a small quantity of DDT is needed in insecticides, and usually from 0.1 to 10% of it in dusts or sprays is sufficient, depending on the intended use. Many different preparations containing DDT in varying quantities will no doubt become available to civilians through their regular dealers. Presumably in most instances instructions for the use of each product will be provided by the manufacturer.

"Persons desiring to use DDT are cautioned by the bureau of entomology and plant quarantine that insecticides containing this new material will be suited to some of their needs, but not to all of them. The entomologists point out that DDT is not effective against all insects and that against certain insects it is much slower in action than some other poisons now in use, such as pyrethrum or rotenone. However, deposits of the material have been found under some conditions to remain effective as a contact poison against many insects for a much longer time than do those of some other insecticides. The proper formulation to use against each pest, the rate and time of applications, and whether or not DDT can be expected to give more satisfactory and more economical results than other available materials have not yet been worked out for many insects. Care should always be taken to avoid applying larger dosages than required."

Not Recommended

At this time DDT insecticides cannot be recommended for use on grain, forage or other crops that are to be used as animal feed because of the possible danger associated with residues. As in the case of lead, arsenic and fluorine, care should be taken to avoid residues of DDT on fruits and other parts of plants or plant products to be used as human food. In oil solutions or emulsions, DDT is readily absorbed through the skin of man and animals. Persons using it in this form are urged to take special precautions to avoid repeated or prolonged exposures to the material in oil solutions.

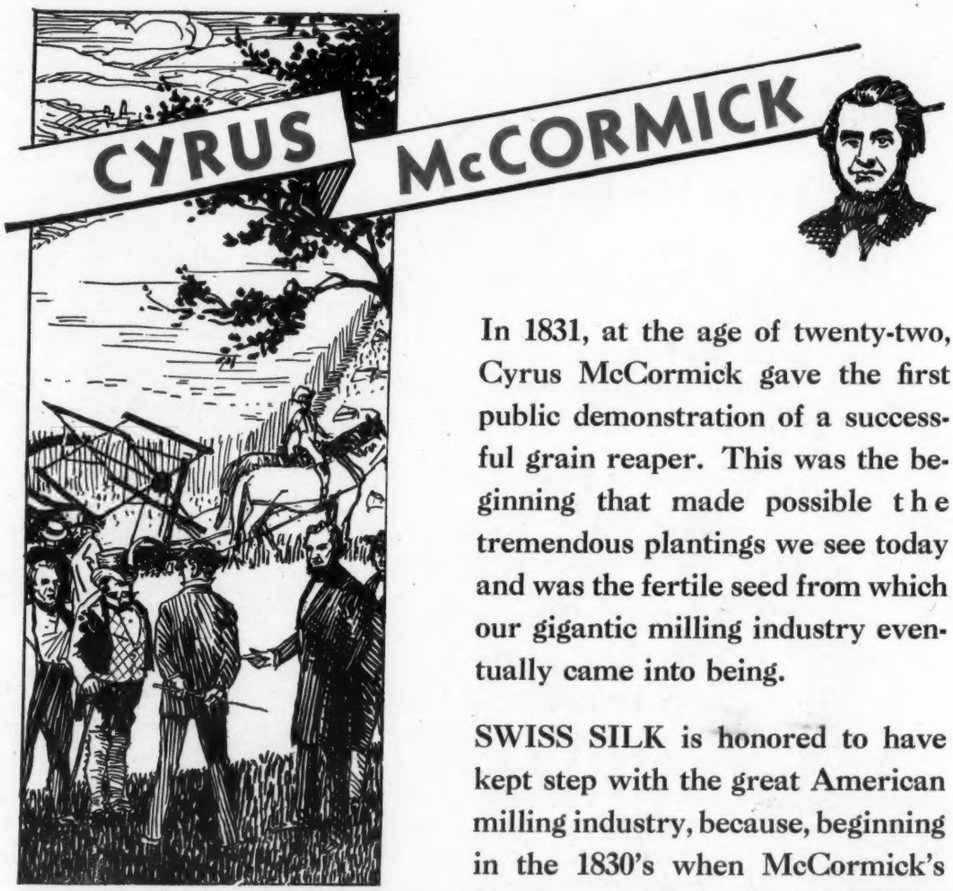
Because of the poison hazard, the use of DDT is not recommended on stored grains or cereal products that are to be used for food by humans or animals.

Treatment of Grain Bins, Warehouses and Mills

The following recommendation made by the bureau of entomology and plant quarantine is subject to change as the results of further experiment under field conditions may indicate.

In the treatment of grain bins,

★ FAMOUS NAMES IN INDUSTRY ★



In 1831, at the age of twenty-two, Cyrus McCormick gave the first public demonstration of a successful grain reaper. This was the beginning that made possible the tremendous plantings we see today and was the fertile seed from which our gigantic milling industry eventually came into being.

SWISS SILK is honored to have kept step with the great American milling industry, because, beginning in the 1830's when McCormick's reaper was still an infant, SWISS SILK was being used by American millers to bolt their fine flour just as it is being used today by their grandsons, who know you can't buy better bolting cloth.

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warehouses and mills it is recommended:

"Sprays containing 5% or less of DDT dissolved in refined deodorized kerosene or in water suspension or emulsion have been found very effective and are recommended for use on walls and woodwork of warehouses, flour mills and empty grain bins. The weevils and other insect pests of stored grain and cereal products crawling on or burrowing into the walls or woodwork are killed as they come in contact with the DDT residues. Enough spray is used to cover the surfaces without run-off, but the quantity applied should not exceed 1 gallon per 1,000 square feet. Care must be taken to avoid contamination of grains and food products when applying the sprays, and precautions to avoid fire are essential if the oil spray is used."

Experiments show that DDT is one of the most efficient materials yet tested for treatment of paper or fabric bags or cardboard cartons to prevent entrance of insects that attack cereal products.

DDT has also been found to be extremely effective against most of the common pests of stored seed and its use for that purpose is recommended.

Editor's Note: The foregoing article appeared originally in a recent issue of "Milling Around in Washington," published by the Millers National Federation.

—BREAD IS THE STAFF OF LIFE—

Making Money From Weeds

THE dictionary definition of a weed is: "A wild growth in the nature of rank grass—any unsightly, useless plant growing on cultivated ground to the injury of desired vegetation." A better definition which seems not to have been used, could read: "A weed is a plant growth which science and human understanding has not yet succeeded in finding an economic use for."

As knowledge of the chemistry of vegetative growths expands, it has been found that many so-called "weeds" have intrinsic values. A large portion of vegetation now classified as weeds may ultimately be found to have properties which contribute to nutritional or economic needs. Many of them have oil-bearing and stock feeding values. Fanweed seeds contain from 25 to 30% of oil that has uses ranging from lubrication to the production of foods. The exigencies of World War II stimulated exploration of their possibilities as a substitute source material for the production of vegetable oils.

Weeds are the bane of farmers in wheat growing areas. Rabbit ear and fanweed produce prolifically. They are difficult to control. The seeds ripen before wheat is ready to cut, shatter and reseed the ground. These do not all germinate at the same time and in consequence, cultivation has to be frequent to eradicate weed growth. Systematic efforts are being made to save these seeds rather than to continue to spread them over grain fields. Dual advantages would result by lessening weed growth, which takes moisture from the wheat plants. Farm revenue would derive from a source which has heretofore been neglected.

Perennial Wheat

(Continued from page 3a.)

of work of this type are great and the progress is slow. This is well illustrated by the fact that W. J. Sando began making wheat and wheatgrass crosses at the Arlington Experiment Farm in 1923 but it was not until 1935, after using several different species of wheatgrass, that fertile crosses were obtained.

Three Wheatgrass Hybrids Tested

Hybrids involving three different species of wheatgrass have been given limited tests in Kansas. Several types are illustrated in the accompanying figures. Strains tested have been selections from crosses made in Canada or by plant breeders in the U. S. Department of Agriculture. Attempts to get seed of the strains developed in Russia have not been successful. E. R. Sears, a plant breeder at the University of Missouri, sent first generation seeds from five crosses that originated at the Siberian Agricultural Institute, Omsk, U.S.S.R., but only one of the seeds germinated. This plant grew rapidly, headed promptly like a spring wheat and bore several beardless spikes that were fully self-fertile. Tests must be given this strain to establish its economic worth.

Two annual strains of wheat and wheatgrass crosses, originally obtained from Mr. Sando, have been grown in a nursery at Manhattan for several years. They are largely self-fertile but are not perennial.

It is apparent that distinct types may be selected, some of which may have desirable characters, such as disease resistance. Neither strain grown in the nursery, however, has given as much seed or forage per unit of area as the Turkey wheat check plots grown nearby. One of the strains has appeared very much like common wheat in plant charac-

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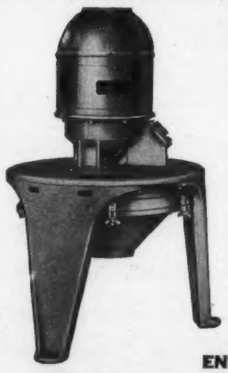

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ters and has survived each winter with good stands.

Thirty-three other plants from Mr. Sando's crosses involving wheat and wheatgrass, back-crossed one or two times to wheat, were tested for rust in 1941. Of these, eight gave results showing no infestation of leaf rust and all were resistant to stem rust. The plants were transplanted to the field but none of them behaved as perennials in the Kansas climate.

Another group of plants was received in 1944 and represented new selections from similar crosses but having more perennial-like tendencies. In the greenhouse they showed variation for mildew and aphid resistance. They were not tested for rust resistance.

Seeds from open-pollinated Mindum durum wheat and wheatgrass crosses were obtained in 1943 from C. A. Suneson of the U. S. Department of Agriculture at Davis, Cal. From these seeds 31 plants were grown in the greenhouse during the 1943-44 season. Nine of the plants were small-tufted, glossy green, glass-like types and perhaps perennial in nature since they failed to head at the normal time. Sixteen of the plants had tall, weak straw with blue-green leaves and were annual in growth habit. The remaining six plants appeared to be intermediate in plant type and growth habit. All of the plants that headed had very weak straw and long beardless heads with hairy glumes like the wheatgrass parent. The plants were highly self-sterile and only seven of them produced seed. In all, 82 kernels were produced, 50 of which resulted from back-crossing with pollen from a wheat plant.

From these seeds, 45 plants were grown in the greenhouse during the winter of 1944-45. Only nine appeared to be of the small, tufted, grass-like perennial type; all of the others seemed to be annual or intermediate in habit. Perennial character, however, often is not clearly evident in plants grown in pots in a greenhouse.

The backcrosses varied widely in head characters of which some were awnless, some partially awned and some completely awned. Most of the plants had long grass-like spikes with widely spaced spikelets but a few had broader and denser heads and more nearly resembled common wheat. The backcrosses were found to be nearly immune to leaf rust of wheat (race 9) except for eight plants that showed considerable resistance. In 37 plants flecking was the only sign of infection. Tests for resistance or immunity to stem rust (race 56), showed that 10 plants were nearly immune, 18 were highly resistant, 10 were moderately resistant, 4 were susceptible and 3 plants escaped infection. It appears, therefore, that a high degree of resistance to leaf and stem rusts can be transmitted to the wheat-wheatgrass hybrids.

Two strains of simple wheat-wheatgrass crosses in the third generation were obtained from the Central Experiment Farm, Ottawa, Ont., for testing in Kansas. These plants persisted for two years in the nursery at Manhattan before being plowed up. The plants did not produce much seed and the seeds were not free-threshing. The vegetation was coarse, very much like the wheatgrass parent. These two strains showed considerable resistance to rust.

All of the research done in Kansas must be considered preliminary and the results should not be regarded as conclusive. Tentative plans have been made to enlarge the scope of the experiments on perennial wheat when conditions permit. Seed from other plant breeders in the United States and Canada is being assembled and efforts will be continued to get some seed from Russia.

A total of 129 different strains have been collected. New crosses, further back-crossing to both wheat and wheatgrass, and reselections of strains already available are contemplated. These, when tested and studied adequately, should yield information upon which sound conclusions can be based.

The studies thus far show that grass-like perennial types are more readily selected than wheat-like perennials. The economic aspects of this work and the promise in such hybrids is unknown, although none of the strains tested seems to have any immediate practical value for the hard winter wheat area.

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Proper Illumination in Flour Mills

* * * * * * * * *

Good Lighting Results in an Improved Product, Less Eyestrain and Greater Safety to Employees

By Dr. Waldemar Schweisheimer

THERE is no doubt that good illumination is of primary importance to the employees as well as to the efficiency of every industrial plant. The advantages to industry of good illumination are, according to a survey of the Illuminating Engineering Society: greater accuracy of workmanship, resulting in improved quality of the product with less spoilage and less re-work; increased production as well as decreased costs; better utilization of floor space; greater ease of seeing, especially among older employees, thus making them more efficient; less eyestrain for all workers; improved morale resulting in decreased labor turnover; more easily maintained cleanliness, and greater safety.

Headaches and Glasses

Not only the eyes are suffering from poor vision and continuous strain on the eyes. A miller suffered for many months from headaches in the late afternoons which bothered him considerably and reduced his efficiency. He looked everywhere for the cause of the trouble: a previous sinus trouble, insufficient sleep, fatigue and exhaustion.

Finally an eye doctor found out that the miller was nearsighted. He ordered the correct glasses for the worker and the headaches ceased immediately. Nearsightedness may produce headache as well as dizziness, nausea and feeling of pressure in the head. Well-fitted glasses correct all troubles originating from nearsightedness and similar conditions. The degree of the optic trouble is determined by the strength of the lenses needed to correct it. The lenses scatter or gather the rays of light which fall upon the eyes so that the correct spot on the retina is reached and a sharp picture is projected upon it.

Illumination and Efficiency

The Illuminating Engineering Society has recommended certain minimum standards of illumination for industrial interiors. The data in its table refer to the general lighting or lighting throughout the total area involved as measured on a horizontal plane 30 inches above the floor.

The recommended figures in the table for Milling (Grain Foods) are:

	Foot-candles
Cleaning, grinding and rolling	10
Baking or roasting	20
Flour grading	30

The design and installation of combined illumination must not only provide a sufficient amount of light but also must provide the proper direction of light diffusion, eye protection, and in so far as possible, must eliminate direct and reflected glare as well as objectionable shadows.

As for natural illumination, there are certain recommendations made by the U. S. Public Health Service. Windows and other glass openings for illumination should be constructed in accordance with the following requirements:

Minimum Window Area Requirements for Natural Illumination

Space	% of floor area served
Workrooms	30
Offices	150
Eating places and kitchens	150
General storage rooms	30
Basement and cellars	30
Locker rooms	10
Toilet rooms	10

Skylights should have glass areas not less than required for the windows they replace. They should be arranged with the sides extended above the roof and there provided with hinged glazed sash and metal sash openers. The skylight also may be arranged with fixed metal louvred sides of required opening, and a pivoted glazed sash should be provided at the ceiling line of the room.

Sight in Older Persons

Today when many more workers of advanced age are busy in industry, some consideration for the requirements of their age may make them fully efficient. Usually between the ages of 40 to 50, presbyopia (old sight) begins to appear. It is actually a normal change due chiefly to gradual loss of elasticity of the lens of the

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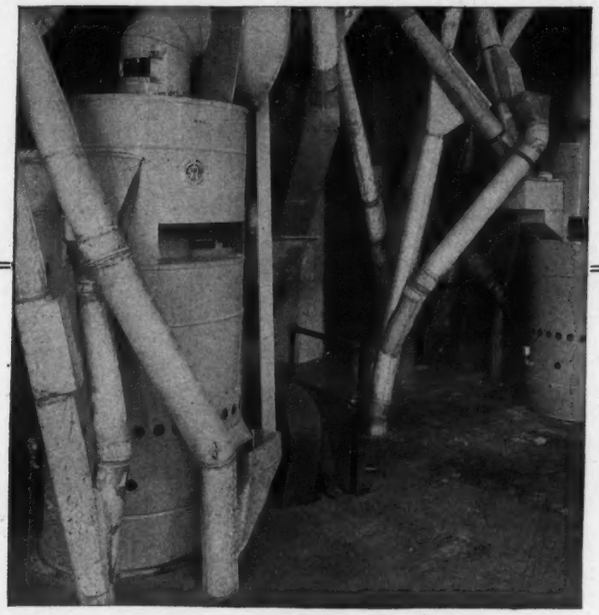

eye. A worker 42 or 45 years of age, who has always enjoyed a good eyesight, may note that he must push his work (or his head) farther and farther away for exact seeing. Much can be done to give relief and assistance to those eyes. Different glasses may be needed for working at close range and reading, and for seeing at a distance. In such cases either two pairs of glasses are used; or the worker uses glasses the upper part of which is ground for the distance while the lower part is ground for objects at close range.

If the condition be uncorrected the presbyopic worker may suffer from pain, fatigue, lachrymation (shedding tears), dimness of vision, lasting headache. Many of those highly skilled older workers in the flour and grain industry can continue to perform efficiently if the simple means of assisting the eyes with good illumination is adopted.

Workers with old sight prefer especially strong illumination instinctively because this produces contraction of the pupils, and this improves the vision temporarily. Proper lighting helps greatly to avoid eyestrain, while improper lighting actually shortens the duration of normal seeing. The same holds true for flickering light.

Other Eye Troubles

Far-sighted eyes cannot see the objects near at hand without giving considerable extra work to the muscles of accommodation in the eye. This often results in eyestrain, but this condition, too, can corrected by glasses. The same is true for correc-

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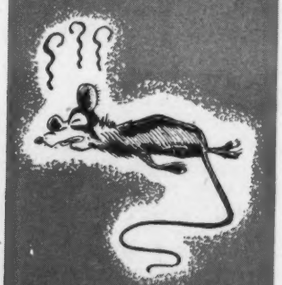

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tion of astigmatism—which is a frequent condition produced by abnormal rotation of the axis of the eye to the side. The vision in those cases is blurred at close range as well as at distance. Other complaints of astigmatic workers are headache and eyestrain.

Care of Eye Injuries

There are some methods of treatment which claim to strengthen the eyes and the vision by exercising the eye muscles. Whatever the success or supposed success of those elaborated methods, there is no doubt that any worker with nearsightedness, astigmatism, old sight or any similar condition is bound to wear glasses if he wants to do his work in the most efficient way. The proper care will prevent unnecessary strain on the eyes and prevent unpleasant eye troubles successfully.

Should a pointed foreign body be embedded in the cornea part of the eyeball or the innerside of the lid, it may be harmful to attempt to remove it immediately. Such foreign body may be a particle of grain, or flour, or wood, and any attempt by an unexperienced hand to remove it, may drive the foreign particle still deeper into the tissues. All that should be done is to hold a sterile compress or a clean handkerchief over the closed eye and have the foreign body removed by an eye doctor. No wound of the eye should be touched with the fingers and neither should that part of the compress which comes into contact with the wound be touched with the fingers.

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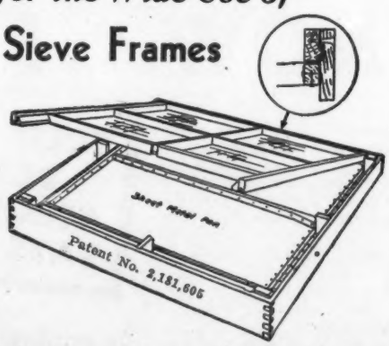

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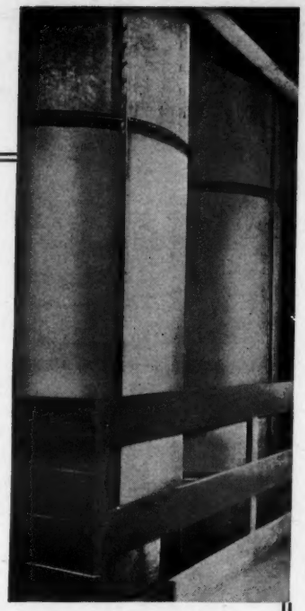

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OILS, FATS IN THE MILLING INDUSTRY

By C. G. Harrel and R. O. Brown
Research Laboratories, Pillsbury Mills, Inc.

Reprinted from "Oil and Soap"

THE problems arising from fats and oils in the milling industry are always current problems which require constant attention. This vigilance is necessitated by the requirement of long shelf life for cereal products and by the fact that every crop year baking characteristics of the new crop change, thus requiring corresponding changes in the bleaching, maturing and milling technology. These changing baking characteristics, as well as crop failures, demand a constant revision of wheat blends which also reflects on the keeping quality. Much of the information presented in this article is common knowledge to the milling industry, but we present it in the belief that it will be of interest to you of the oil and fat industry.

The factors enumerated below are the main points to be considered in the stability or keeping quality of mill products:

1. The fat content of the wheat from which the flour is to be milled and the condition of this fat.
2. The fat content of the mill product under consideration.
3. The type and extent of bleaching and maturing.
4. The copper, iron, manganese and magnesium contents of added ingredients, such as phosphates, soda and salt and of the mill product.
5. Conditions of storage.
6. The mill in which the mill product is manufactured.
7. The moisture content of the mill product.
8. The type of enrichment.

Of these factors the fat content is the most significant. By this fat content we mean the natural fat content. The lower the fat content of the wheat, the longer the keeping quality of products from that wheat on a comparative basis. The older the wheat, the shorter will be the induction period before rancidity will develop. Before we go further it may be well to state that the organoleptic test or smell test is the most satisfactory criterion of keeping quality in cereal products. Bin burning and other unusual conditions occurring in the handling of wheat are also reflected in the keeping quality.

Table 1 gives the approximate fat analysis, ash content and approximate keeping time as measured by freedom from rancid odors.

Table 1.—Fat Content and Keeping Quality of Cereal Products

Mill product	Ash content %	Fat content %	Keeping time Mos.
Soft wheat short patent flour ..	0.34-0.36	0.72- 0.75	24-48
Hard wht. family patent flour ..	0.39-0.41	0.85- 0.90	18-24
Hard wht. bakers patent flour ..	0.44-0.46	0.87- 0.93	14-20
Soft wheat straight flour .	0.46-0.48	0.82- 0.86	18-30
Hard wheat straight flour .	0.48-0.52	0.90- 0.96	14-18
Soft wheat clear flour ...	0.60-0.66	1.05- 1.10	9-14
Hard wheat first clear flour ...	0.70-0.80	1.05- 1.15	9-12
Hard wht. second clear flour ...	1.2 -1.3	1.5 - 1.75	6- 9
Whole wht. flour	1.9 -2.0	2.25- 2.50	9-12
Wheat germ ...	4.0 -5.5	7.5 -12	3- 6
Wheat bran ...	5.5 -4.8	4.5 - 6.0	8-18
Light rye flour.	0.60-0.70	0.9 - 1.1	14-18
Med. rye flour..	0.85-0.95	1.3 - 1.5	9-12
Dark rye flour..	1.9 -2.2	3.3 - 3.7	6-12

These keeping qualities are to be under average temperature of 70-75° F., and for average bleached flours, higher temperatures would rapidly decrease the induction period while lower temperatures would increase it. In many cases for bakery products other conditions rule out the use of the cereal product before organoleptic rancidity is a factor. During the hot summer months whole wheat flour is undesirable for quality bread after a storage period of two to three months whereas it would last for at least six months from a rancidity standpoint. The lowered volume and blistering of the crust in this case eliminate it before rancidity would. Evidence indicates this is the result of fat changes. This is shown in Figure 1.

Certain improving agents must be added to the flour to obtain a product that will satisfy the American consumer. These agents mature, age and bleach the flour. In former years it was necessary to age flour for a certain time before it could be used to produce bread of maximum volume. This natural aging process furnished many chances for infestation and absorption of odors as well as increasing the necessary investment of millers and bakers. Another disadvantage of this natural aging was

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Fig. 1.—The sample loaves shown in the pictures above were baked from old and new whole wheat flour.

Fig. 2.—The test loaves of bread in the picture above illustrate the beneficial effect of flour treatment with nitrogen trichloride. The sample loaf on the left was made from treated flour; that on the right from untreated flour.

the difficulty of obtaining a uniform flour from a baking standpoint. The use of nitrogen trichloride furnished an artificial aging effect that eliminated the necessity of storing vast quantities of flour for several months and also supplied a flour that is uniform in its baking results. Figure 2 shows the result accomplished by the nitrogen trichloride treatment. The advantage of using this treatment is obvious. Nitrogen trichloride also does a certain amount of bleaching and the problem of balancing the necessary aging requirement against the accompanying bleaching action is often very ticklish. This agent is one of the most dangerous treatments from the viewpoint of rancidity.

In certain pastry products a maturing action is necessary in order to obtain good baked products. Chlorine is the agent which accomplishes this. Figure 3 shows the great advantages of this chlorine treatment on cake production.

This treatment is of little advantage if not of disadvantage on the cooky production as measured by the spread. This is shown by Figure 4.

As in the case of nitrogen trichloride the chlorine is also a powerful bleaching agent, and the balance between maximum maturing action and bleaching effect is more sensitive than in the preceding case because of the decreasing pH due to the chlorine treatment. Chlorine is the most dangerous treatment because of the danger of rancidity accentuated by the change in pH.

Benzoyl peroxide and nitrogen peroxide are the two most commonly used agents for bleaching effect alone. Benzoyl peroxide is by far the most commonly used bleach and is usually used in conjunction with nitrogen trichloride and/or chlorine.

This discussion of the aging, maturing and bleaching agents of cereal products leads up to one point, namely, the effect on rancidity. All of these agents are of a detrimental nature on the keeping quality. While a careful use of these treatments causes no apparent harm, the indiscriminate use and careless control lead to trouble. This is especially true in the use of chlorine and benzoyl peroxide. This combination is used most commonly on soft wheat flours bound for cake, pastry and biscuit production. The extreme use of these agents enables some operators to utilize dark colored grades at the expense of the keeping quality. A bleached clear flour

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will only keep one half the time of the unbleached sample. When the miller removes more than 70-80% of the color, the oxidizing action also markedly affects the fat. This is of special importance in the South where pastry flour is most widely used. The combination of the higher temperature of storage with the heavier bleaches causes a widespread use and presence of rancid flours. The treatments affect the keeping quality in the following order: chlorine is the worst offender, nitrogen trichloride is next, and benzoyl peroxide is the least dangerous.

The addition of other ingredients such as in the case of self-rising and phosphated flours increases the hazard to the keeping quality. The addition of ingredients such as sodium bicarbonate, monocalcium phosphate, and sodium acid pyrophosphate causes little decrease in the keeping quality if the ingredients are chemically pure, but the presence of minute quantities of metals, such as copper, iron, manganese, and magnesium quickly induces the rancid condition. In case of salt the presence of 2 ppm. of copper in the salt will decrease the keeping time about 15% when 1.5% of that salt is added to a product over the keeping time if chemically pure salt is used. These ingredients should be manufactured in stainless steel equipment.

Flours used as a base for these self-rising and phosphated flours are heavily bleached because the consumer demands a certain whiteness. In addition, these flours are used primarily in the South. The combination of all these factors, namely, heavy bleaching, high temperature of the South and added ingredients, causes short shelf life. This results in the common use of slightly rancid flours in the South.

Pancake flours employ unbleached flour as their base ingredient since bleached flour very frequently develops a rancid condition in pancake mixes. The use of bleached flour does have certain beneficial results from a baking standpoint in pancake mixes. Development of an antioxidant to apply to bleached flour for the prevention of rancidity is a promising field in which little work has been done. Such an antioxidant could be in a powdered form or in the form of a shortening to be sprayed in such mixes. This is a problem of mutual interest to the oil chemist and the cereal chemist.

All mills are different. They differ in the method of grinding, the degree to which they dress the flours and cleanliness, etc. This is all reflected in the keeping properties of their products.

The addition of hydrogenated fats to milled products in the preparation of prepared mixes causes little trouble if the metal content of other ingredients is at a minimum and the proper equipment is used for handling and mixing. In cases of intimate mixtures of flours and hydrogenated shortening a mutual supplementation occurs in the keeping quality. One classic case of this consists of a patent flour spray dried with 50% shortening in 1935. Today it is still in extremely good condition. The keeping quality in this case is longer than for either ingredient alone. Another example of this is in adding fat to a dried bean soup mix. The keeping time before a bitter after-taste develops is more than doubled.

The effect of rancid ingredients on baked products is not as great on the volume as on the taste. The volume of whole wheat bread is affected greatest by the use of rancid fat. The volume of white bread is affected but not to the same degree as that of whole wheat bread. Cake volume is also affected but the effect on taste is much greater. There are many antioxidants that can be added to cereal products. Among those that can be considered for human consumption are lecithin and soya products. Table 2 shows this effect.

In the summary we will make the following poinnts:

1. The fat content of the milled product is the most important factor to be considered in the evaluation of the keeping quality of milled products.
2. Bleaching and maturing treatments demand consideration when evaluating keeping quality. These agents in order of their effect on keeping quality are chlorine, nitrogen trichloride and benzoyl peroxide.
3. The metallic ingredients of the flour, such as copper, iron, etc., and of added ingredients, are instru-

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mental in shortening the keeping time.

4. The addition of good hydrogenated shortenings does much to improve the taste and keeping quality of prepared mixes.

5. Certain antioxidants definitely improve the keeping quality.

Table 2.—Effect of Some Antioxidants

Mixture	Keeping time
Control	35 days
1% Lecithin	87 days
0.5 Lecithin	90 days
0.125 Lecithin	63 days
20% soy (extracted)	93 days
10% soy (extracted)	77 days
5% soy (extracted)	63 days

Fig. 3.—Beneficial effects of flour treatment with chlorine or maturing agent. The samples on the left were treated; those on the right were untreated.

Fig. 4.—The cookies in the above picture show the effect of treating cookie flour with a maturing agent.

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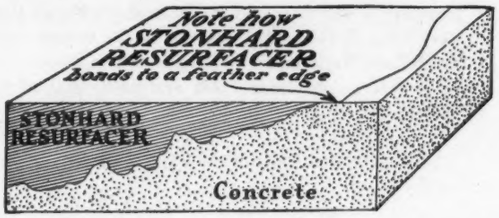

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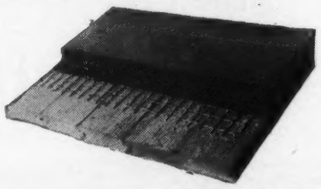

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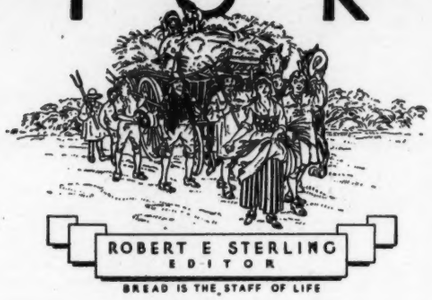
EDITORIAL



FREEDOM ON TRIAL

FOR nearly a decade prior to December 7, 1941, American industry and commerce were active in resistance to the growing New Deal encroachments upon the freedom of private enterprise. Headway in opposition in those trying years was largely limited to two major decisions of the Supreme Court before that ancient and august body was made captive by politics and became subordinate to the all-powerful executive department of government.

With the oncoming of war this resistance of industry and commerce against increasing government directives necessarily came to an end. The whole power of American capital and management instantly enlisted in the business of production for war; and the government, after a period of hesitancy dictated by political considerations, placed sufficient restraints upon organized labor so that it too joined wholeheartedly in a unity of effort with production results astonishing not only to the people of this country but to the whole world, including enemy nations.

Within the past few months the war, in its military aspects, came to an abrupt end. The war of politics and economy, both domestic and international, however, continued and there are still unconvincing assurances of restoration of peace anywhere in the world. This situation is, to be sure, the normal and probably inevitable aftermath of all wars and merely greater now than ever before because the war just ended fell little short of exceeding the sum total of all previous wars in history in material and moral destruction of civilization.

We review these facts known to everyone as preliminary to commenting upon immediate events and circumstances here in our own country and more particularly on the reduced resistance to the obvious march toward socialization of our own enterprise and industry. Almost daily we note instances of private enterprise compromising with the principles which it has maintained for nearly two centuries and petitioning government to continue directives and authorities born with the New Deal and grown to vigorous strength in the subsequent years of war.

It is obvious that these controls were essential to war and cannot be released overnight. This is especially true of price controls as a defense against destructive inflation, which would engulf us all. It doubtless is also true temporarily of certain essentials of agricultural controls, which have been so multiplied through the years that to abandon them wholly could result only in widespread disaster. The authority of government is, indeed, just as essential to ease all things back to normal as it was in creating the productivity essential to winning the war.

But what now is being revealed more fully from day to day is that private enterprise is, in a steadily increasing number of ways, inviting continuing controls of itself in the interest of its own greater profit—controls of price, distribution, priorities, even continued rationing to save industry from its own weaknesses. At the moment, in instance, we not only find organized labor demanding that wages be based upon ability of ownership and management to pay but asserting the right to take a hand, through government, in fixing the price of products and the profit from their production. We find, too, a certain tendency to yield the principle involved in this amazing scheme IF a quid pro quo can be secured in added security for investment and management.

A little apart from this but involving the same surrender of independent enterprise are the petitions to continue rationing so that producers and distributors may not be embarrassed or enmeshed in too serious price competition as new commodities become available. Even in our own breadstuffs industries we note now and then evidences of favor for the government's assuming additional controls over production, price, distribution and even rationing of the products of agricultural processors which may prove to be of advantage to them.

It doubtless is true that these invitations to the government to keep its feet in the industrial trough are regarded by those who issue them as due to "emergency." All recent experience, however, has proved that when bureaucracy acts in an emergency that emergency never ends and the commission or directive provided to fix it up for the time being is almost sure to serve through endless time. Few boards at Washington ever are discontinued and few orders ever are terminated although they may from time to time be altered to meet some real or fancied change in situations or in the minds of those who have authority.

We are confident that most readers of this comment will agree that its description of the situation is essentially true. Further than that we suspect that if they will search their own minds they will find that either in the past or even now they are accepting, because of benefits derived or perhaps only anticipated, encroachments upon their freedom which they formerly opposed with so great vigor.

It is perhaps worth keeping in mind that there is an essential difference between the present administration at Washington and its predecessor. The former strong and self-willed president knew what he wanted, even though he indulged in frequent and often whimsical changes of mind. The present executive, well meaning but lacking in self assertion and disposed to find "good fellow" outs for troublesome problems, is of a wholly different type and very much more likely to be influenced, especially with an eye on re-election, by sound and vigorous opposition.

In our judgment, therefore, it is time for what is called free enterprise and all who believe in it to abandon all and every type of horse trading for temporary advantage or mere convenience and resume their former position in opposition to every scheme tending toward any managed or socialized economy in all of its specious guises. Even then they probably will do well to win half a victory.

• • •

FARM INCOME SUPPORT

RIGID farm price parity concepts built on the current historical model are rapidly being converted into something that looks remarkably like a system of income support which would permit a freer play of competition in domestic markets at lower prices and in greater volume, at the same time providing easier competition in world markets. Recent utterances of the secretary of agriculture, Mr. Anderson, seem to state the matter in about this sensible and reassuring way. Mr. Anderson wants a kind of stream-lined parity quickly responsive to current market relationships and designed to replace "with fairness both to producer and consumer" the present parity mechanism, which he says has become "a patchwork of special provisions that for many commodities have little relationship to reality."

The term "fairness" is not precisely defined, but Mr. Anderson says it can be. It involves efficient use of agricultural resources, and this term, he says, implies "that prices within agriculture will be subject to adjustment and change in relation to each other to maintain reasonable balance." The farmer's share of the national income would be high, of course, for it would be based on full employment and high levels of industrial activity.

There is no philosophy of scarcity in Mr. Anderson's agricultural realism. On the contrary he definitely is a prophet of abundance. If high production should drop prices too far, he would resort to government subsidies. Short of reaching a depression level he would let efficient producers protect themselves against lowered prices by increased efficiency and help inefficient producers shift over to other crops or out of farming entirely. Increased consumption, anyway, would follow lower prices, and that would be the best insurance of a profitable agriculture.

It is an inspiring and admirable outlook that unfolds itself before the official eye of Mr. Anderson—an outlook bright with opportunity for a better nourished nation at ever lower unit costs of production through advancing technology. "This means," he concludes, "that fewer farmers will be able to produce more for our growing population, and they will be able to produce it easier and with less damage to the land."

There never was anything but a statistical surplus of agricultural products in this country, and now Mr. Anderson proposes to abolish even that by the only plausible method short of bureaucratic planned parenthood for pigs and wider spacing of cotton rows.

• • •

BRITAIN'S POSTWAR BREAD

CLEARLY enough, Britain is going to have vitamins in its bread; not quite so clear is the manner of their incorporation, though a current event indicates pretty strongly that in considerable part they will be synthetic. There is historic propriety in this, for Britain was first in the bread enrichment field. Synthetic enrichment doubtless would have been as definitely established in the United Kingdom as it now is in the United States had not the war interfered with an official program that had to be amended to conserve shipping space required for bringing in wheat. The saving in this respect was not great but it was vital, and those who have been officially concerned with the bread program have been careful to credit postponement of vitaminization to the shipping contingency and not to any change of mind on nutritional principles or methods.

Elsewhere in this issue appears a dispatch from our London office reporting upon a conference between government officials and representatives of millers, bakers and flour importers. The unanimous recommendation is for flour enrichment, but government officials appear to continue their liking for the present high extraction flour. Most significant is the trade attitude, which doubtless will be more and more strongly represented in the further considerations that are expected to lead to a decision on the ultimate nature of postwar bread. Millers, bakers and flour importers have pronounced themselves categorically in favor of enrichment by synthetic vitamins added to low extraction flour.

Canadian ★ ★

CONDUCTED BY A. H. BAILEY
Manager Canadian Branch
Lumsden Building Toronto 2, Ontario
Cable Address, "Palmking"

Canadian Mission Studies European Markets for Surplus Food Outlets

Toronto, Ont.—The government of Canada is sending its minister of agriculture, J. G. Gardiner, and the minister of trade and commerce, J. A. MacKinnon, to Britain and Europe for the purpose of studying food requirements and trade possibilities of 1946. As an outcome of their findings the program of this country for that and succeeding years will be determined.

One of their objectives is to acquaint the British government with the facts regarding food production in Canada and the necessity of bringing this into sound economic relationship with the requirements of British and European markets. Long-term contracts may be necessary in order to accomplish this purpose. Mr. Gardiner believes that the greater part of Canada's surplus of food must be sold in British markets and that it is essential to bring this output into some sort of relationship with the food program of the United Kingdom.

With regard to continental Europe Mr. Gardiner says Canada is being asked to provide more food than ever before in history and that it is essential to know just what the requirements are and how long the need will last.

As matters stand at present the area to be sown to wheat in Canada next spring is about 23,500,000 acres but this may be increased if the situation at seeding time suggests more. Western farmers are urging a larger acreage but that will mean less of the feed grains and a reduction in the output of cattle and hogs, which are badly needed for famine relief overseas. A controlling factor in this connection will be labor of which the supply in Canada is already inadequate.

Mr. MacKinnon's mission abroad will take in the wider aspects of Canadian trade relations with the United Kingdom and Europe. There is much uneasiness in Canada as to the meaning of recent restrictions on imports of goods from Canada into Great Britain and of the rather vague assurances from British authorities that these are temporary measures which will be removed shortly. The Canadian ministers will go into these problems with a view to satisfactory interpretations.

Canada is not seeking any preferential treatment in Britain or on the continent and the whole purpose of her postwar policies is to encourage freedom of trade the world around. The minister of finance at Ottawa has just introduced in parliament a bill to provide $750,000,000 of credit to countries needing foodstuffs and other commodities from Canada. An earlier bill set up a fund of $100,000,000 for this purpose the whole of which was almost immediately absorbed by countries with which this country had satisfactory trading relationships before the war. Almost half of this $750,000,000 is already bespoken by Czechoslovakia, Norway, France, Belgium, Russia, Holland and the Netherlands East Indies. China seeks similar grants. These credits will all be spent in Canada.

—BREAD IS THE STAFF OF LIFE—

PROTEIN CONTENT OF 1945 CANADIAN WHEAT IS 13.8%

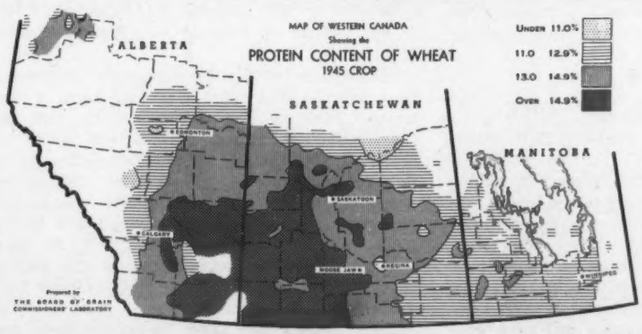
Winnipeg, Man.—The average protein content of the 1945 crop of western Canadian hard red spring wheat is 13.8%, according to the final estimate released by the Board of Grain Commissioners Laboratory. This figure is higher than that for 1944 by 0.8%, and higher by 0.2% than the mean for the 19 years during which surveys have been made by the laboratory.

A comparison of the 1945 and 1944 protein levels by provinces follows: Manitoba 12.3 and 12.7%, Saskatchewan 14.1 and 13.2%, and Alberta 13.9 and 12.8%. Additional and more detailed data are contained in Bulletin 18, "Protein Survey of Western Canadian Wheat, 1945 Crop," by J. A. Anderson, T. R. Aitken and I. Levi.

The 1945 survey is made on the analyses of 5,942 samples grading 1 to 4 northern, 4 special and 1, 2 and 3 C.W. Garnet, and includes 962 samples from 248 stations in Manitoba, 3,312 samples from 836 stations in Saskatchewan, and 1,668 samples from 424 stations in Alberta. A summary of the results by provinces is given in the accompanying table. A large colored map, showing the results of the protein survey, is available for distribution.

Province	No. of samples	Mean %	Range %
Manitoba	962	12.3	9.3-15.5
Saskatchewan	3,312	14.1	8.4-19.9
Alberta	1,668	13.9	8.5-19.3
Western Canada, total	5,942	13.8	8.4-19.9

—BREAD IS THE STAFF OF LIFE—



THIS MAP, prepared by the Board of Grain Commissioners' Laboratory, shows the final results of that agency's protein survey of the 1945 wheat crop in western Canada, and is based on 5,942 samples grading No. 1 to 4 Northern, 4 Special and 1, 2 and 3 C. W. Garnet.

Canadian Overseas Grain Shipments Treble Year Ago

Toronto, Ont.—Overseas clearances of Canadian wheat during the first three months of the current crop year, namely, August, September and October, totaled 90,011,000 bus, as compared with 36,925,000 in the corresponding period last year, the Dominion Bureau of Statistics reports.

United States imports of Canadian wheat for consumption and milling in bond in the same period amounted to 7,500,000 bus, as against 24,163,000. Customs exports of Canadian flour in terms of wheat were 14,062,000 bus, compared with 13,769,000 in the same period of 1944-45. The total of these clearances for the three months this year is shown at 111,573,000 bus, as against 74,857,000 in the same period of preceding year.

It will be noted the figures of wheat clearances shown above are not customs exports, although flour is given as customs exports. The customs exports of Canadian wheat and wheat flour combined are also given in the bureau's table and show higher figures. The total for the three months ending with October last is given at 117,641,000 bus, compared with 85,630,000 in the same period of previous year.

—BREAD IS THE STAFF OF LIFE—

OPERATING DIFFICULTIES

Montreal, Que. — Catelli Food Products, Ltd., manufacturers of macaroni, vermicelli, noodles and fancy pastes, and distributors of canned goods, has found operating conditions difficult in recent years. Shortage of materials, such as cheese and canned tomatoes, has restricted volume of sales. In addition there has been a problem in connection with shipping facilities to markets normally served. Although there has been recession in operating and net earnings from peak level of 1940 present earnings compare favorably with pre-war results. The plants are operated at Montreal, Winnipeg, Lethbridge and Vancouver. A new plant, erected in 1940 in Montreal, replaced two former plants. A plant at St. Catharines, Ont., was sold while one at Three Rivers, Que., has been idle for some time.

British Import Ban On Canadian Goods Only Temporary

Toronto, Ont.—The Canadian government is in receipt of an assurance from Great Britain that the current practice of refusing import permits for goods from Canada is purely a temporary measure. Ottawa had asked the British government to define its policy with regard to this matter.

This has now been done with the result that the Canadian government made a formal statement in the House of Commons to the foregoing effect. This came from the minister of trade and commerce, Mr. MacKinnon, with the added statement that "the British authorities hope it may be possible to proceed to a more definite policy before very long."

For the moment essential supplies of foodstuffs and raw materials will receive priority. Import licenses are to be restricted to such goods as are necessary to supplement home production and hasten British economic recovery.

—BREAD IS THE STAFF OF LIFE—

GRAIN EXPORTS REDUCED BY SHIFTING SCHEDULES

Vancouver, B. C.—Reallocation of ships to other trades and nonarrival of some vessels posted to load here during the month reduced the export grain movement from local elevators in November to 4,900,174 bus, compared with 5,961,778 in October, according to Vancouver Merchants Exchange figures.

However, the export clearances for the crop year to Nov. 30 hit 17,137,620 bus, while in the same period last season less than 1,000,000 bus were cleared.

In addition to the Vancouver export movement, 338,466 bus, all for Russia, went from the Prince Rupert elevator and 191,581 bus, including 120,848 bus on Soviet orders, moved from the New Westminster house. This makes a total for British Columbia elevators in November of 5,320,221 bus, against 7,673,398 the previous month.

The United Kingdom and Continent received the largest part of Vancouver's grain exports in the latest month, 2,214,537 bus. India was next with 1,562,710, while New Zealand took 783,999, Russia took 221,323, China 74,667 and South America 43,569.

—BREAD IS THE STAFF OF LIFE—

HOPES FOR U. S. MARKETS

Toronto, Ont.—An opinion on how to protect export trade, amongst others recently published in the Financial Post, Toronto, was one by D. A. Campbell, president and managing director of the St. Lawrence Flour Mills Co., Ltd., Montreal. Mr. Campbell said that "the problem is one for experts to solve. One thing

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"AMERICAN SPECIAL"
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CRACKER FLOUR
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A High Grade Baker's Spring Patent
Milled Under Laboratory Control from Montana Spring Wheat
Sheridan Flouring Mills, Inc.
SHERIDAN, WYOMING

is certain, Great Britain will pull through. We should hold fast to the empire, extend credits and continue tariff concessions. Meantime, for seven prewar years to 1939 we had an average annual unfavorable trade balance with the United States of $125,000,000 (exclusive of gold and travel). Let us seek to remedy this by an endeavor to gain access to United States markets on such things as wheat and flour and other natural products."

—BREAD IS THE STAFF OF LIFE—

RECORD CANADIAN MILLFEED OUTPUT CONSUMED AT HOME

Toronto, Ont.—The Dominion Bureau of Statistics reports that during the 1944-45 crop year the flour milling industry set a new record for production of by-products, when 815,000 tons were produced, as compared with the previous all-time record of 797,000 tons established in 1943-44. The continued keen export demand for Canadian flour indicates that the present high output of millfeeds is likely to be maintained during the present crop year.

In the first two months of the current crop year, August and September, production of millfeeds totaled over 136,000 tons, as compared with 131,000 tons in the corresponding period a year ago. Restrictive exports during the past few years have made larger supplies available to the Canadian feeder. During the 1944-45 crop year, all but 5.1% of these millfeeds was retained for use in this country. The record of claims paid under the freight assistance policy reveals that over 88% of the production is moved to feeding areas under this scheme.

The accompanying table showing production and exports of Canadian millfeeds since 1938-39 indicates the greatly increased production and the larger quantities retained in Canada since prewar years.

CANADIAN MILLFEED OUTPUT AND DISTRIBUTION

	Production tons	Exports tons	Exports as % of production %
1938-39 ...	555,515	173,275	31.2
1939-40 ...	656,205	276,072	42.1
1940-41 ...	681,083	300,996	44.2
1941-42 ...	686,304	93,800	13.7
1942-43 ...	792,208	51,186	6.5
1943-44 ...	797,083	36,038	4.5
1944-45 ...	815,672	41,683	5.1

—BREAD IS THE STAFF OF LIFE—

ALBERTA WHEAT POOL SHOWS $753,956 NET

Winnipeg, Man. — The financial statement of the Alberta Wheat Pool, in annual meeting in Calgary, Nov. 27, showed surplus earnings for the year ending July 31 of $753,956, after provisions were made for $523,014 for depreciation on buildings and equipment and $147,716 for interest payment to the Alberta government on 1929 indebtedness.

—BREAD IS THE STAFF OF LIFE—

GRAIN MEN ELECTED

Vancouver, B. C.—At the 24th annual meeting of the Vancouver Merchants' Exchange four grain men were elected to the board of trustees as representatives of the trade here. They are: Robert McKee, Canada Grain Export Co., Ltd; John Whittle, Midland Pacific Terminals, Ltd; H. H. Smith of Earle & Stoddart, Ltd., and Philip Wolfe of James Richardson & Sons, Ltd. Retiring president is R. J. Bicknell of Gulf of Georgia Towing Co., Ltd., who reported that the exchange has already reorganized to adapt itself to peacetime conditions. In line for the presidency and to be named by the new board of trustees is C. H. Grinnell, head of Seaboard Lumber Sales, Ltd.

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Uniform High Quality
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KILN DRIED
BUCKWHEAT FLOUR
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Emphatically Independent

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LAWRENCE, KANSAS
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North Dakota and Montana
FANCY SPRING PATENTS, CLEARS and WHOLE WHEAT FLOUR
Hi-Protein
A Specialty
Mills in the Heart of the Spring Wheat Section
Capacity, 700 Barrels
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SAXONY MILLS
ST. LOUIS, MO.
Our 94th Year

The Williams Bros. Co.
Merchant Millers KENT, OHIO, U. S. A.
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All our wheat is grown on "Western Reserve" and bought from the growers at elevators we own and operate.

THE WALNUT CREEK MILLING CO.
Millers of Fine, Country-Milled Kansas Wheat Flours
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Imported Flour Cherished by Dutch During War Years

London, Eng.—In a letter from N. V. Meelunie, Amsterdam, flour importing firm, to the London office of The Northwestern Miller, the following interesting story is given of flour conditions in Holland during the war years and since the liberation:

"After the occupation we continued to receive some copies of your fine publication which we read with much interest, especially those with letters from London. These were passed from hand to hand as if they were 'illegal' papers.

"The lots of American and Canadian flours which were bought by our government in 1939 and at the beginning of 1940 helped our population through many difficulties. At the start all bakeries could use the foreign flour, but soon it was only delivered for special purposes. Large quantities were sold up to and including Feb., 1942, but after that the flour stocks were exhausted so the inland flour mills made a special blend with a certain percentage of Manitoba wheat for the rusk factories and other industries which could not work with the inland meals. This special flour was extracted at 82½%, whereas the ordinary bread flour was extracted at 85½%.

"Up to 1944 small quantities of Manitoba wheat could be added to the so called B² flour, although at the last it was only 10%. The bread flour, so called government flour, was composed of wheat, rye, barley and potato starch in differing percentages. In July, 1944, the composition was 85% flour (70% rye and 30% wheat extracted at 85%), 14.6% potato flour and .4% calcium carbonate.

"It was not easy for the bakers to bake tasty bread from this government flour, and you can easily understand the joy of the bakers as well as of the public when the first Swedish Red Cross bread could be baked here from really white wheat flour. We could not believe that we had ever eaten bread of such fine color and appearance before the war.

"Our stock of samples of Canadian, Australian and American wheat flour was carefully conserved, so that even in 1944 we could, on special occasions, give our staff, family or good friends one or two pounds of real wheat flour for the baking of a festival cake. So flour, most probably milled from wheat of the 1938 crop arriving here in 1940, brought joy to birthday parties six years afterwards. With our Dutch customers we continued and extended our pleasant and friendly relations, so that now we are already doing good business and we are looking forward to more through the distribution of American flour again. Before the war we were the largest distributors of the special flour that was milled here from choice inland wheat and stocks of Manitoba.

"Many consumers who bought American flour only before the war were allowed during the war to use various kinds of potato starch instead. In this line, also, we are by far the largest wholesale dealers in the Netherlands, so that as soon as we are no longer limited by quotas, we trust that our share in the importation of American flour will rise considerably."

——BREAD IS THE STAFF OF LIFE——

IMPORTED FLOUR AGAIN DISTRIBUTED IN ENGLAND

London, Eng.—As cabled to The Northwestern Miller on Nov. 6 importers of England and Wales again are permitted to distribute a proportion of imported flour with their allocations of national flour. The "Amendment to the Flour Order, 1945," as it is officially known, provides that millers, importers and flour factors in England and Wales can sell and deliver imported flour to bakers in the proportion of one sack (280 lbs) of imported to nine sacks of national flour sold and delivered at the same time. This does not interfere with the existing requirements of millers to mix 5% of imported flour in their milling grist for national flour. Persons, other than millers, may not mix imported flour with national flour to be sold as flour, as that would constitute the making of a specialty flour, for which a license from the Ministry of Food would be necessary.

In Scotland, the importers are permitted to distribute 25% of imported flour with their sales of national flour, that is to say, one sack (280 lbs) of imported flour may be delivered to every three of national.

Under the new order, restrictions on the use of imported flour to articles other than bread are removed, as is the prohibition on the use of semolina in the manufacture of bread, flour, confectionery and biscuits.

This return to direct distribution of imported flour—at present mostly Canadian—is regarded with much satisfaction by the English flour importers and flour factors, even if it is only a small allocation, for they feel it is one restriction removed from their legitimate trade and encourages them to anticipate more complete trading facilities in imported flour later on. Since bakers have been using this small quantity of imported flour, London bread already shows some improvement. The Scottish importers have been fortunate in that they have been able to distribute a certain limited quantity of imported flour throughout the war years and the Scottish bakers have been allowed to incorporate it in their bread mixture, but only in bread. Now, it is understood, they may use it in flour confectionery and biscuits.

The provision permitting the use of semolina in bread and flour confectionery has not aroused very great interest among bakers. They are skeptical as to the extent it will be available for their use, since the supply of recent years has been so limited.

——BREAD IS THE STAFF OF LIFE——

★ A. E. Owen Retires ★

* * *

Leaves Spillers, Ltd., After 48 Years of Service

London, Eng.—A. E. Owen, general manager of the southeastern area of England for Spillers, Ltd., London, one of the two large milling combines in the United Kingdom, retired on Nov. 14, after 48 years' service with the company.

On Nov. 7, Sir Malcolm Robertson, chairman of Spillers, Ltd., presented Mr. Owen with a rose bowl and a pair of candlesticks on behalf of the directors of the company, while his colleagues on the staff presented him with a silver salver and a pair of silver candlesticks. On Nov. 12 the southeastern group of flour millers held a dinner in London in honor of Mr. Owen, during which many prominent figures in the British milling industry paid warm tribute to their guest of honor.

Mr. Owen was born in Cardiff, Wales, and joined Spillers in 1897 as a junior invoice clerk in that city. Shortly afterwards he transferred to the flour selling department, and six years later, having become very interested in advertising, was placed in charge of a traveling exhibition designed to popularize a proprietory brand of brown flour known as "Turog." A year later Mr. Owen returned to the office to organize a national campaign to publicize the product.

In 1911 Mr. Owen was sent by his company to Chicago to attend an International Advertising Convention, a visit which developed his knowledge and appreciation of the science of advertising.

In 1916, Spillers, Ltd., having inaugurated a glucose manufacturing business under the name of Nicholls, Nagle & Co., Ltd., in Manchester, Mr. Owen was appointed commercial manager. When this business was sold six years later to American Corn Products, Inc., Mr. Owen became commercial manager of the Cardiff and Channel Mills, Ltd., a subsidiary of Spillers. In 1927 he was made a director as well as sales manager of the southwestern area. In 1930 he was appointed to the position of general manager of the southeastern area.

——BREAD IS THE STAFF OF LIFE——

QUIBBLE IN PARLIAMENT ABOUT FLOUR EXTRACTION

London, Eng.—In Parliament the minister of food recently was asked what would be the annual saving in shipping tonnage if all flour consumed in this country were of 85% extraction and what further saving would be obtained if only whole meal flour were used.

Sir Ben Smith, the minister, replied that it was estimated that if the extraction rate of flour milled in the United Kingdom were raised to 85% 342,000 tons less wheat would be required than with the present 80% extraction rate. If the extraction rate were raised to 100%, 1,279,000 tons less wheat would be required than under the present rate. In neither case, however, would there be any saving in shipping tonnage as it would be necessary to import a corresponding amount of animal feedingstuffs to compensate for the loss of milling offals which would result from an increase in the extraction rate.

Sir Ben was then asked if he was aware that, even if it would not save shipping it would save an enormous number of lives if we had "real flour instead of the rubbish we are getting now?"

The minister replied: "And it will also kill a lot of livestock in this country."

He was then asked: "Was not this change made merely to suit the millers' combine, and was not the food minister's predecessor deceived and misled?"

Sir Ben Smith: "The change was made in agreement with the nutritionists."

This was contradicted by the questioner but the minister of food insisted that there was complete agreement between all the experts on the 80% extraction. He said a White Paper was about to be published which would confirm that.

British Trade Groups Favor Synthetic Flour Enrichment

London, Eng. (By Cable).—A government "white paper" on the postwar loaf has just been published, covering the report on a conference between government officials and representatives of millers, bakers and flour importers. The unanimous recommendation was for flour enrichment. Government officials supported natural enrichment from high extraction flour, but the trade representatives recommended enrichment by added vitamins to low extraction flour. No definite decision was reached, and further investigation is in progress, but the conference unanimously recommended that meantime the present 80% extraction flour, which includes a percentage of white imported flour, should be maintained.

A new development which greatly extends fermentation tolerance. Provides more time for "cutting over" or giving dough extra punches. If you want a flour which will stand abuse, write or wire

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Cake and Pastry Flours
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Sponge Cracker Flour
The J. C. Lysle Milling Company
Leavenworth, Kansas

Our Migrant Population

(Continued from page 18.)

tween 1930 and 1940, when there was no drain on the civilian population for the Armed Forces, the population in this size group increased only 1,662,253, or 4.6% of the 1930 population in such places. The process of population concentration has been stepped up during the war years. The census spokesmen conclude that it may be expected that demobilization will bring large numbers of veterans back into these cities and that their postwar population will be considerably larger than it is now, provided, of course, that not all of those who have moved into the cities move out again now that the war is over, an eventuality which is considered extremely unlikely.

GI Redistribution

The civilian population in all regions is due for a rise when demobilization takes place. Not all veterans will go back to where they came from, but the majority will probably do so. Southern and western areas, which have large numbers of servicemen stationed on military posts, may expect a loss in total population with demobilization. The North, with its heavy contribution to the Armed Forces and its relatively small share of military installations, will gain sharply in total population. Since the number of persons who have gone into the services can be closely estimated for all areas, it is a relatively simple matter to judge the effect of demobilization on any one of them.

As for migrants, they will probably tend to stay where they are if economic conditions permit. Persons who have moved from farms will probably not go back to farms, unless economic conditions force them to. At this point, then, the postwar distribution and movement of population become questions of what economic conditions will be and where economic opportunity will be best.

On the County Basis

Analyses of population data for metropolitan counties and congested production areas that have already been made are discussed by the authors of the Advertising and Selling article, who state that 137 metropolitan areas (composed of 237 counties and independent cities) have been classified with respect to past patterns of growth and with respect to their prospects for postwar growth. These areas contain all the large cities and more than half of the total civilian population. Of the 137 metropolitan areas, 60, or 44%, were classified as areas with relatively good postwar population prospects; while 33, or 24%, were classed as having relatively poor postwar population prospects. Eleven, or 8%, were expected to lose population after the war, and 33, or 24% of the areas, were expected to "come back" after the war.

On a regional basis, as might be expected from the summary of population trends already given, the southern and western areas obtained relatively favorable classifications compared with those in the North. The South and the West contained by far a major percentage of areas with good postwar population prospects and a smaller percentage of those with poor ones. Of the 48 southern metropolitan areas, 34, or 71%, were put into the class with

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FLOUR
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THE WM. KELLY MILLING CO.
Capacity 2,500 Barrels HUTCHINSON, KANSAS

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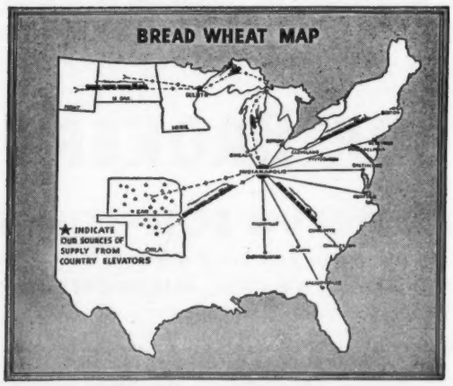

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MATHEW C. BELAN . . . *Milling Consultant*
Successful record of milling every type of grain in all parts of the country
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CONTINENTAL GRAIN CO. MILLING WHEAT FROM EVERY PRODUCING SECTION OF THE UNITED STATES

TERMINAL ELEVATORS		OFFICES		
Chicago	Columbus	New York	Nashville	Peoria
St. Louis	Portland	Chicago	Enid	Galveston
Kansas City	Galveston	Kansas City	Minneapolis	Portland
Omaha	Enid	St. Louis	Davenport	San Francisco
Toledo	Buffalo	Omaha	Buffalo	Vancouver, B. C.
		Columbus		Winnipeg

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"THERE IS NO SUBSTITUTE FOR QUALITY"

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FLOUR BUYING "BARGAINS" are likely to prove disastrous. For more than 45 years you have bought our brands with perfect safety, knowing that they represented the highest and most *Dependable Quality* that scientific milling could produce. Do not experiment now.

BAY STATE MILLING CO.
WINONA, MINNESOTA
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For more than 32 years exclusively

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GRAIN MERCHANTS
Milling Wheat and Coarse Grains
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MILWAUKEE, WIS.
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PORTLAND, ORE.
DULUTH, MINN.

good prospects while only one area (2%) fell into the group with poor prospects. Of the 15 western areas, 13 fell into the former group and none into the latter. In contrast, only 13 of the 74 northern areas, or 18%, were put into the group with good population prospects, while 32, or 43%, of the northern areas fell into the poor prospect class. Approximately equal proportions of the metropolitan areas in each of the three regions were classified as areas which were expected to be greatly deflated population-wise. The North contained the largest proportion of areas expected to "come back" (31%), and the West, the smallest (7%).

Because the classification of postwar prospects in these studies is based on the growth history of each area, there is admitted to be considerable possibility of error in the prediction for any one area. New factors not present in its population history of the past few decades could alter the trend for a given area. On the other hand, projections of this type actually take a great many factors into account. Population growth, state Hauser and Eldridge, is not itself a fundamental factor in the development of a community. It is rather the result of a great many factors which are fundamental, factors which boil down in the last analysis to economic opportunity or the ability to attract and sustain population. In this light, the pattern of past growth can be seen as a measure of the ability of an area to attract and sustain population. Large and complex metropolitan areas cannot change very rapidly in these respects. Consequently, past experience is quite a good basis for speculation as to future experience.

The Congested Areas

Detailed information is available on the composition and characteristics of the resident and in-migrant population in 10 areas which have had a heavy war impact. The Censuses of Congested Production Areas were conducted by the Bureau of the Census during the first half of 1944, at the time when the war phase was at or near its height.

A study of the migration data from these censuses produces evidence that wartime migration has not been just a casual movement of unattached individuals, but, to a large extent, a movement of families, women and children having migrated in large numbers. There is, therefore, reason to believe that a considerable proportion of war migrants have made what they regard as permanent moves.

A study of the labor force in congested areas indicates that if full employment is to be maintained for the persons now in the 10 areas and if full employment is to be provided for returning servicemen, there will have to be from 26 to 90% more jobs available in the areas than were available in 1940.

Population Fallacies

"It would not do to close this brief view of the population situation," state the census spokesmen, "without calling attention to the fallacies which are likely to attach themselves to considerations of population size. It has become the custom to regard only a growing community as a healthy community. This is probably a faulty notion. It is clear that differentials in the rates of growth among the regions of the nation are not at all directly cor-

(Continued on page 37.)

SEVEN
Great Bread Makers
From Selected Spring Wheat

DULUTH UNIVERSAL
PRIDE OF DULUTH
DULUTH RELIABLE
PURE GOLD
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APEX—Fancy Clear
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Try our high protein spring wheat Graham and Whole Wheat flours, Farina and Pure Wheat Germ.

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IT'S BIN AGED
Flour from this mill comes to you fully aged — ready to use
ATKINSON MILLING CO.
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"Gooch's Best"
SUPERIOR QUALITY
to Make All Baked Things Better
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UNIFORM QUALITY FLOURS
PLAIN AND SELF-RISING
Low cost laboratory controlled mill grinding all types of wheat
Pancake Flour—Cake Flour—Farina—Whole Wheat Products—Prepared Biscuit Flour
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BLACK BROS. FLOUR MILLS
1863-1944
FLOUR 1,000 BBLS.
STOCK FEED 250 TONS
WYMORE • NEBRASKA

BLAIR'S Certified FLOUR FEEDS
BLAIR MILLING CO., Atchison, Kan.

ACME RYE
A HIGH QUALITY
WISCONSIN RYE FLOUR
All Grades
FISHER-FALLGATTER MILLING CO.
WAUPACA WISCONSIN

NO IMPROVEMENT IN GRAY GOODS SUPPLY

Bag Manufacturers Unable to Get Any Sizable Amount of Sheetings or Osnaburgs

New York, N. Y.—Bag manufacturers continue to be faced with the inability to obtain cotton textiles. Sales in the past week in gray cloths were chiefly in sheetings and those sales were for immediate delivery and in very small individual lots.

An increasing number of textile mills have integrated their weaving with finishing—some nearly 100% as far as bag cottons are concerned—and the net result is that there is a smaller available supply of Class A and B sheetings and osnaburgs, textiles most commonly used in making flour and feed bags.

The mills are upgrading or finishing their gray cloths into dress prints or in plain colors. Producers who have such finished goods for sale say that while bag manufacturers protest such offerings, they accept them, rather than nothing. Some of these goods find end uses in the form they are sold.

This development, added to the already short supply of preferred bag textiles, makes the gray goods situation even more gloomy. There has been practically no business extended into next year other than that placed several months ago when some producers decided to book from three to six months ahead. This represented a negligible part of the market, however.

Developments in the burlap market last week were favorable to a sharply improved supply situation in 1946, perhaps early in the year. Optimism was based on reports from Calcutta that production is reaching a 50,000,000-yard per month market surplus and that shipments are rising sharply, due to reach a peak figure of 140,000,000 yards in November; and one step by CPA in issuing a supplementary burlap allocation to the bag industry for this month of 50,000,000 yards.

Following the recent discussions with the trade in Washington, it is hoped that import restrictions will be eased next year in view of the favorable Calcutta position, which is reflected by the weak market there. Furthermore, the bag trade allocations expected shortly for the first quarter are expected to be increased as a result of improved arrivals and the additional quotas granted for this month.

The Calcutta market has remained erratic, moving up and down in a narrow range. This continued weakness was interpreted by observers here as belying any threat of strikes as reported earlier in some cables here. Little business is being transacted by importers at this time for the first and second quarters of 1946, the trade preferring to await developments in regard to government controls and clarification of the supply and shipping outlook.

Quotable prices of importers, representing duty paid selling price per yard at U. S. port of discharge, at the end of last week on standard constructions were: 40-in, 7½-oz, January-March 7.85c, April-June 7.70c; 40-in, 10-oz, January-March 10.25c, April-June 10c.

Bemis Bro. Bag Co.'s cotton goods index, a composite figure reflecting wholesale prices of principal cotton cloth used in bag making expressed in cents per yard of cloth, is 8.87, as compared with 8.41 a year ago. The Bemis composite figure reflecting duty paid early shipment prices of heavy and lightweight Calcutta burlap expressed in cents per lb of cloth is 16.16, as compared with 17.55 a year ago.

—BREAD IS THE STAFF OF LIFE—

CROP IMPROVEMENT MEETING

Minneapolis, Minn.—The Minnesota Crop Improvement Association will hold its annual meeting Jan. 16, at the University Farm, and this will be followed by a short course on plant pathology Jan. 17.

—BREAD IS THE STAFF OF LIFE—

COMMODITY MARKET GROUP ELECTS OFFICERS FOR '46

Chicago, Ill.—At a meeting in Chicago Dec. 6 of the board of directors of the National Association of Commodity Exchanges and Allied Trades, Inc., officers for the forthcoming year were elected as follows:

President, Ody H. Lamborn, president of the New York Coffee and Sugar Exchange, Inc; first vice president, J. O. McClintock, member of the board of directors of the Chicago Board of Trade; second vice president, Walter H. Mills, vice president General Mills, Inc; executive vice president, J. A. Higgons, Jr., member of the board of managers of the New York Coffee and Sugar Exchange, Inc; secretary and treasurer, O. W. Olson, business manager Chicago Mercantile Exchange.

Members of the executive committee elected were: J. O. McClintock, chairman, Chicago; Gunnard A. Johnson, Kansas City; George Hintz, New York City; Walter H. Mills, Minneapolis; J. Hollis Griffin, Chicago.

Policies and programs were determined by the directors for the association over the coming year in behalf of the functioning of the nation's commodity futures markets in the public welfare. The board was addressed by the new governor of the Associated Commodity Exchange, ex-Senator Samuel D. Jackson of Indiana.

Directors of the association elected for the forthcoming year by the constituent member exchanges were: Chicago Board of Trade, J. O. McClintock, J. Hollis Griffin; Board of Trade of Kansas City, Gunnard A. Johnson, Walter R. Scott; Chamber of Commerce of Minneapolis, F. Peavey Heffelfinger, Walter H. Mills; Chicago Mercantile Exchange, Maurice Mandeville, O. W. Olson; New York Cocoa Exchange, Inc., Charles H. Butcher, George Hintz; New York Coffee and Sugar Exchange, Inc., John C. Gardner, Ody H. Lamborn; New York Produce Exchange, Charles B. Crofton, Laurel Duval.

Joseph P. Henican of Merrill, Lynch, Pierce, Fenner & Beane, New York City, and E. S. Morgenstern, president of the Robinson Milling Co., Salina, Kansas, were elected Class "B" directors.

—BREAD IS THE STAFF OF LIFE—

United States Grain Stocks

Commercial stocks of grain in store and afloat at the principal markets of the United States at the close of the week ending Dec. 1, 1945, and Dec. 2, 1944, as reported to the United States Office of Marketing Services (WFA), in bus (000's omitted):

	American		Canadian in bond	
	Dec. 1 1945	Dec. 2 1944	Dec. 1 1945	Dec. 2 1944
Wheat	121,707	166,705	25,219	36,399
Corn	7,685	13,682	...	...
Oats	45,049	16,674	4,782	7,366
Rye	4,768	13,021	363	647
Barley	22,706	33,728	697	1,040
Flaxseed	7,937	4,499	573	672
Soybeans	24,513	23,861	...	...

Stocks of United States grain in store in Canadian markets Dec. 1 (figures for corresponding date a year ago given in parentheses): wheat, 5,000 (60,000) bus; corn, 1,000 (403,000); soybeans, 91,000 (158,000).

for outstanding achievement in food processing

☆

One year ago, at the presentation of the Achievement "A" Award Flag for outstanding food production, the Men and Women of Fisher Flouring Mills Co. pledged themselves to continue the efforts that had merited this award.

Now, on November 28th, 1945, the United States Department of Agriculture has added the white star to our "A" Flag, for distinguished service in the processing of food for the current year.

In accepting this award, we men and women at Fisher's recognize that the war's end has not lessened the need for the food we produce . . . that the continued production of food is an important contribution toward a lasting peace. To that end, we dedicate our efforts for the coming year.

Fisher's

FISHER FLOURING MILLS COMPANY

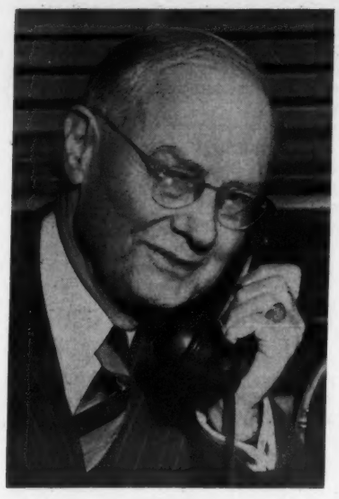
SEATTLE, U. S. A.

Dean W. Perkins

FLOUR CLUB HEAD — Dean W. Perkins, Pillsbury Mills, Inc., has been named president of the Minneapolis Flour Club for the ensuing year. He succeeds David W. Moore of the Russell-Miller Milling Co. The new vice president is George L. Maas, King Midas Flour Mills. Thomas J. Whalen, Atkinson Milling Co., was elected secretary-treasurer, succeeding S. S. Stanchfield, Commander-Larabee Milling Co.

Alex L. Walker

PROMOTION — Coatsworth & Cooper, Ltd., Toronto grain and feed firm, Toronto, Ont., has announced the election of Alex L. Walker as a director and treasurer of the company. Mr. Walker, who has been associated with Coatsworth & Cooper since the beginning of 1943, was formerly with Parrish & Heimbecker, Ltd., a concern that has been long established in the Canadian flour, grain and feed trades. Mr. Walker has had wide experience in both eastern and western Canada and is fully qualified for his new duties.



C. H. Wright

EXCHANGE PRESIDENT—For the fourth time C. H. Wright, vice president of the Iowa-Nebraska Grain Co., has been elected president of the Omaha Grain Exchange. He was chosen at the annual board of directors' election meeting held recently. Mr. Wright, who served as president of the exchange in 1921, 1922 and 1931, succeeds D. O. Aller, vice president of the Butler-Welsh Grain Co. Other officers named were: R. E. Miller, Updike Grain Corp., and A. W. Nielsen, West Central Cooperative Grain Co., vice presidents; R. M. Scoular, Scoular-Bishop Grain Co., treasurer, and F. P. Manchester, re-elected secretary.

Curtiss C. Coleman

ASSISTANT TREASURER—Curtiss C. Coleman has returned to Pillsbury Mills, Inc., after 39 months in military service and has been named assistant treasurer of the company. He succeeds Cornelius O'Donnell, who has retired after more than 50 years of continuous service with the firm. Entering the army in April, 1942, Mr. Coleman was a captain in the army air forces. Joining Pillsbury Mills in 1929 after graduation from the University of Minnesota, he worked as a clerk in the grain accounting department, and was later appointed a clerk in the cashier's department. In 1932 he was named assistant cashier to the manager of the cashier's department.

MOSTLY PERSONAL

Recent three-day ceremonies at the Roanoke (Va.) Consistory conferred upon **W. T. McNeil,** head miller of the flour division of Lindsey-Robinson & Co., Inc., Roanoke, his thirty-second degree in Scottish Rite Masonry, as one of a class of 60 victory reunion candidates from southwestern Virginia. Mr. McNeil, who has been with the Lindsey firm for five years, became a master Mason in 1936.

●

Logan P. Johnson, secretary, Atkinson Milling Co., Minneapolis, is visiting the trade in the central states territory.

●

Herman Steen, vice president, Millers National Federation, visited Kansas City Dec. 4 on federation business.

●

Among visitors to the Chicago office of the Millers National Federation last week were **Robert V. Harris,** vice president and secretary, Harris Milling Co., Mount Pleasant, Mich; **F. L. Gunderson,** vice president in charge of the department of research and product development, and **G. Cullen Thomas,** vice president and director, products control, General Mills, Inc., Minneapolis.

●

Southwestern mill representation on the wheat committee of the Millers National Federation, meeting in Washington, D. C., last week, included **J. S. Hargett** of Oklahoma City, president, southwestern division, General Mills, Inc., and **Henry H. Cates,** executive vice president of Tex-O-Kan Flour Mills Co., Dallas.

●

Headquarters of the Oklahoma Millers Association in Oklahoma City was paid a recent visit by **Myron E. Humphrey,** president and general manager, Chickasha Milling Co.

●

G. Santoni, head of the Cannonsburg Furniture & Salvage Co. and a large buyer of flour, is recuperating in Mercy Hospital, Pittsburgh, from a serious gall bladder operation.

●

A hunting trip to southern Missouri points took **Gordon Wood,** vice president and sales manager, Midland Flour Milling Co., Kansas City, away from his desk the past week.

●

Harold Hinn, secretary-treasurer of the Harvest Queen Mill & Elevator Co., Plainview, Texas, was a Kansas City visitor last week. He attended the meeting of District 2, Association of Operative Millers, Dec. 8.

●

W. W. Campbell has retired as manager of the Mesa Flour Mills Co., Grand Junction, Colo., a unit of the Colorado Milling & Elevator Co. Succeeding him is **Vernon D. Howey,** recently returned from service and formerly employed by the Monte Vista Flour Mills Co., also owned by the Colorado Milling & Elevator Co. Mr. Campbell has been with the parent company for 48 years. He served several terms as president of the Western Colorado Millers Association.

●

W. R. Heegaard, general sales manager for the Russell-Miller Milling Co., Minneapolis, has been appointed cochairman of the industrial division in the 1946 fund campaign of the Minneapolis Civic Council.

●

James Haffenberg, New York flour broker, has returned from a visit to the Blaine-Mackay-Lee Co., North East, Pa., which he represents in the metropolitan area.

●

George P. Urban, president of the George Urban Milling Co., Buffalo, has returned from a business trip to Chicago.

●

Edmond J. Coleman has been appointed district manager in Buffalo for the Kraft Food Co., succeeding **Joseph O'Keefe, Jr.,** who is joining Velnap & Thompson, Inc., Chicago, sales promotion agency.

●

P. H. Baum, vice president and director of sales for the William Kelly Milling Co., Hutchinson, Kansas, is calling on connections along the eastern seaboard. He accompanied **C. D. Eblen,** Ashland, Ky., representative of the mill, to Kentucky in his car after the salesman had spent a few days at the mill, and continued east by train.

●

A turkey dinner, with all the trimmings, was recently served Hutchinson grain men and their office forces on the trading floor, with **George E. Gano** and **Paul Gano** of the George E. Gano Grain Co. as hosts. Approximately 100 were present.

●

William M. Jacobs, flour salesman for the past 38 years, retired recently after 26 years with Washburn Crosby and General Mills, Inc. He represented the mill in and around St. Louis and parts of Illinois.

●

L. V. Mika, central states sales director, Valier & Spies Milling Company, called on the Illinois trade last week at the same time **W. J. Grover, Jr.,** was in the Chicago territory.

●

E. B. Frost of Winnipeg, western manager for the Ogilvie Flour Mills Co., Ltd., was a recent Minneapolis visitor.

●

John S. Pillsbury, Sr., chairman of the board, Pillsbury Mills, Inc., has been named Minneapolis sponsor for the Eye Bank for Sight Restoration, Inc., New York. In addition to enlisting donors for eye operations, the

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ALL *of your* FLOURS
in ONE *Mixed Car*
SAVE MONEY, TIME *and* LABOR
Every Item a Quality Product
DANIEL WEBSTER
—AND—
GOLD COIN
Bread Flours, Cake, Pie, and Cookie Flours, Clears, Rye Flours and Corn Meal
Keep Your Stocks FRESH *and* COMPLETE
Eagle ROLLER MILL COMPANY
Since 1856 NEW ULM, MINNESOTA

MILLS STRATEGICALLY LOCATED IN THE CENTRAL WEST AND ON THE PACIFIC COAST . . .
CRACKER-PASTRY-CAKE
DOUGHNUT-CONE-COOKIE
AND ALL OTHER
SPECIAL FLOURS
IGLEHEART BROTHERS
INCORPORATED
EVANSVILLE, INDIANA

"*DURAMBER*"
SEMOLINA
FANCY No. 1
Milled from Carefully Selected
AMBER DURUM WHEAT
AMBER MILLING CO.
MINNEAPOLIS
Cable Address: "AMBERMILCO"

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STANDARD MILLING COMPANY
Millers of
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BAKERY FLOURS

DOBRY'S BEST
and
BEST OF THE WEST
DOBRY FLOUR MILLS, Inc.
YUKON, OKLAHOMA

WISCONSIN RYE FLOUR
Of Uniform and Highest Quality Made From Wisconsin Grown Rye
White Heather Blue Ribbon Rye Meal
Milled by exclusive rye millers to satisfy the demands of the most critical bakers
GLOBE MILLING CO.
WATERTOWN, WIS.
"WISCONSIN MAKES THE BEST RYE FLOUR"

eye bank encourages research and study of the cornea operation.

•

J. H. Compton, Jr., of Wichita, Kansas, who represents the Fulton Bag & Cotton Mills in that territory, after traveling out from the Kansas City office, spent Dec. 8-10 in Minneapolis.

•

Wesley R. Parker, vice president and sales manager, Igleheart Bros., Inc., soft wheat millers, Evansville, Ind., visited old friends and customers in Minneapolis this past week.

•

Fred Borries, Nashville manager for Pillsbury Mills, Inc., has returned from a visit in Chicago.

DEATHS

Thomas J. Cassidy, Minneapolis grain broker, succumbed to a heart attack in an office adjoining the trading floor of the Chamber of Commerce, Dec. 5. He was apparently in his usual good health when stricken. Mr. Cassidy, 71 years of age, had been associated with the grain trade for 44 years, and was a former active partner of the old Charles E. Lewis Co. He recently re-engaged in business on his own account. Surviving him are his widow, four daughters and two sons. A third son was killed in action in Africa.

Seventeen years' service as St. Louis branch manager for Stein, Hall & Co., Inc., New York, N. Y., was ended Nov. 29 in Webster Groves, Mo., with the death, after a three-month illness, of **Morell H. Hayman.** Surviving Mr. Hayman, who died at the age of 57, are his widow, Elizabeth Marsh Hayman, and a son, William Marsh Hayman. The deceased had managed the St. Louis office of the Stein-Hall company since September, 1928.

George Albert Buchanan, chief engineer for the General Baking Co., Oklahoma City, for the past 22 years, died Dec. 2 following a heart attack. He was a native Missourian and had lived in Oklahoma City since 1918.

Clyde Addison Thayer, 64-year-old feed miller and head of the Thayer Milling Co., Chardon, Ohio, died in a Cleveland hospital on Dec. 1 after a two-week illness. He was prominent in Chardon community affairs.

WITH THE ARMED SERVICES

James D. North, a former major in the army air forces, has rejoined General Foods Corp. as assistant merchandising manager. **Curt A. Abel,** major in the ordnance department of the army, has rejoined the company as an associate merchandising manager, and **J. P. Delafield,** formerly of Benton & Bowles, advertising agency, also has become an associate merchandising manager.

★

G. Rowbottom, who recently joined the staff of **E. J. Bermel,** Pittsburgh district manager for the Eagle Roller Mill Co., New Ulm, Minn., after his service discharge, has been recalled to the army. He served overseas for several years.

Since 1882
DOBRY FLOUR
BIG BEN

DISTRIBUTORS ATTEND BANQUET — Almost 200 members and guests of the New York Association of Flour Distributors attended the organization's annual banquet held in the Produce Exchange Luncheon Club in November. There were no speakers at the banquet, which was preceded by a cocktail hour. This was the first social affair held by the club since the end of the war. The banquet was under the direction of the entertainment committee, of which Gus Fleischmann is chairman. He was assisted by J. A. MacNair.

Co-Ordinator Asks Mills for January Export Flour Offers

Under date of Dec. 8, William T. McArthur, flour co-ordinator, circularized mills with a request for statements of the number of bags of flour they could offer for export in January if no subsidy uncertainty was involved and also for the number of bags they could offer for that month regardless of subsidy complications.

With this information in hand, Mr. McArthur said he would attempt to get some definite information concerning the future of the subsidy program and end the uncertainty which now appears to have stymied further export sales by mills which have already booked their limit under the unfilled order balance limitations of the subsidy regulations.

Unofficial interpretations of the subsidy regulations are to the effect that mills are privileged to insert a protective clause in their export contracts which will require the importer to pay the additional 70c sack for flour which will result from subsidy termination. Foreign buyers, however, have so far refused to make such agreement, because unless flour ceilings are increased proportionately, such a premium would be a violation of flour ceilings.

The contract offered by the Production and Marketing Administration on purchases of flour guarantees to protect mills in the event of subsidy termination.

Information given to Mr. McArthur will provide an answer to the question of whether the lack of mill capacity or subsidy uncertainty is the governing factor in limiting January export flour offerings.

There is a growing feeling in Washington that the OPA may not coordinate a ceiling price increase with the date of shipment at the time the subsidy program is terminated. As yet no definite statement has been forthcoming from OPA, because the policy of what to do in regard to higher bread prices has not been decided upon.

Manufacturers Hear Senator Taft Call OPA Policies Unjust

New York, N. Y.—An attack by Senator Robert A. Taft against policies of the Office of Price Administration met with vigorous denials from Price Administrator Chester Bowles here at the golden anniversary congress of the National Association of Manufacturers.

At the corporate business session Dec. 6 Mr. Taft reminded the 4,500 industrialists present of the injustice of OPA policies to smaller companies without representation in Washington. He spoke of black markets which followed freeze policies in many lines of goods.

Senator Taft charged the OPA with "probably the most blatant piece of propaganda in which any government has engaged to perpetuate itself" in the agency's distribution with every October allotment to service men's dependents of a card headed "Danger Ahead, America." This, he said, implied that every retailer is probably a chiseler trying to short change the consumer.

Mr. Bowles asserted that removal of price controls would invite a spiral of inflation which would threaten free enterprise. Labor demands for higher pay checks would be intensified, he said, and he denied that controls tend to hold down production.

Clinton P. Anderson, secretary of agriculture, termed the evernormal granary one of the most successful implements ever devised for agriculture and the nation. He spoke on the dependence of agriculture on prosperity in industry.

Harry Zinsmaster, president Zinsmaster Baking Co., St. Paul, Minn., was one of the 38 new directors elected at the congress.

In announcing NAM officers for 1946 the board of directors named C. M. Chester, chairman, executive committee, General Foods Corp., as one of 10 national vice presidents and John Holmes, president, Swift & Co., and William M. Rand, president, Monsanto Chemical Co., regional vice presidents for the coming year.

—BREAD IS THE STAFF OF LIFE—

ODT TAKES OVER TUGBOATS

Buffalo, N. Y.—The Office of Defense Transportation took possession and control of the property of the Great Lakes Towing Co., ending a 13-week tie-up of harbor activities brought about by a strike of members of the Tug Firemen, Linemen, Oilers and Watchers Union (AFL). The strike was first called when the crews of two tugboats were discharged following a dispute. Other crews walked out in sympathy and the point at issue now is the payment of wages to the crews for the time they were out on strike, and not the original issue.

—BREAD IS THE STAFF OF LIFE—

CCC OPENS OMAHA WHEAT TO FLOUR MILL BUYERS

Kansas City, Mo.—The program of Commodity Credit Corp. to meet wheat needs of mills having less that a 21-day supply of 12% and lower protein on hand or under contract has been broadened to make stocks stored in Omaha and Council Bluffs available for purchase from warehousemen there, subject to the stipulation that sales match only quantities loaded against CCC orders the previous five days.

The original program, inaugurated Nov. 16, covered government stocks stored only at Kansas City, St. Joseph, Salina, Hutchinson, Topeka and Wichita. Since that time, unofficial estimates are that mills have acquired possibly 2,750,000 to 3,000,000 bus ordinary No. 1 and No. 2 hard wheat and a limited amount of red wheat from CCC stocks. However, the quantity available for purchase has been greatly short of demand, which has been of feverish character.

Omaha and Council Bluffs have stocks of about 9,000,000 bus wheat, but the proportion owned by CCC is not known, although it probably is large. The agency recently has been giving elevators there orders to load substantial quantities against its export commitments and warehousemen probably have a five-day backlog of loading that will, initially at least, open up considerable wheat for sale to mills.

In announcing expansion of the program, CCC suggested that inquiries from mills located in the territory that can be served to equal or better advantage by shipments from Omaha than from Kansas City be referred to warehousemen in the Nebraska city.

—BREAD IS THE STAFF OF LIFE—

MILLERS' MEETING IN ST. LOUIS

St. Louis, Mo.—The Rev. Fred E. Andrews, who formerly was a chaplain with the First Infantry Division which saw service in North Africa, Italy and France, will be the principal speaker at a meeting of District 5, Association of Operative Millers, to be held Dec. 15 at the York Hotel, St. Louis. Other speakers on the program will be A. W. Lantz, president of Lantz Bros. Bakery, St. Louis, who will discuss the history of baking, and B. C. Culver, midwestern manager of the insecticide department, American Cyanamid & Chemical Corp., whose topic will be "Fumigation of Flour Mill Machinery Units." Leo C. Schulte, Pfeffer Milling Co., Lebanon, Ill., is chairman of the district organization.

—BREAD IS THE STAFF OF LIFE—

JOINS DAN VALLEY MILLS

Dan Valley, Virginia.—James A. Smith, formerly with the Cleveland Milling Co., Cleveland, Tenn., assumed the position of manager of the Dan Valley Mills on Nov. 19. Mr. Smith had been with the Cleveland firm since 1923.

—BREAD IS THE STAFF OF LIFE—

FEED GROUP TO REVIEW SUPPLY, DEMAND STATUS

Chicago, Ill.—The feed survey committee of the Feed Industry Council will meet in Chicago Dec. 12 and 13 to review the supply and demand situation.

The two-day meeting will be held at the Drake Hotel. The committee includes college men from all parts of the country. Increasing political pressure is being brought to bear on Washington because of the serious protein shortage, according to reports. Trade sources say that this situation is getting progressively worse and wide complaints are being voiced.

Trade sources state that the government has been reluctant to issue the order because of the opposition expressed by the majority in the trade, but that with complaints increasing about the severe situation, some action may be forced upon Washington.

—BREAD IS THE STAFF OF LIFE—

USDA, FEDERATION GROUPS TO DISCUSS GRAIN GRADES

Chicago, Ill.—A meeting of the grain committee of the Millers National Federation with representatives of the Department of Agriculture to discuss details of the pending revision of the federal grain standards law will be held here, Dec. 14.

—BREAD IS THE STAFF OF LIFE—

KELLY SCHEETS TO JOIN SCHULTZ, BAUJAN & CO.

Beardstown, Ill. — Kelly Scheets has been appointed assistant sales manager in the flour division of Schultz, Baujan & Co., Inc., manufacturers of flour, corn meal and feed. He will begin his new duties the first of the year.

Mr. Scheets formerly was with the Standard Milling Co. in Chicago, and prior to that he was with the Sims Milling Co.

Wheat Famine

(Continued from page 9.)

charges. Industry spokesmen asked if it would not be possible for the CCC to absorb the excess between the two markets. Again this proposal was turned aside on the ground that the CCC Kansas wheat stocks are also earmarked for export markets.

CCC Aid Asked

Following this impasse, the most favorably received proposal from the industry group position was the request that the CCC buy Kansas wheat and resell it at the Texas ceiling, thereby incurring a loss on the transaction. Although it was not brought out at the meeting, it was subsequently noted that the CCC does not appear to have the legal authority to make sales below parity except for export as surplus material. However, this aspect was not mentioned by the CCC officials who were present at the meeting.

Another proposal brought forward by the industry members was that the OPA raise Texas and Oklahoma flour ceilings to permit the acquisition of higher priced interior wheat by southwestern millers. This was flatly rejected by OPA officials. Observers here say it is inconceivable that the OPA would adjust Texas flour ceilings to reflect higher priced Kansas wheat, inasmuch as there would be no guarantee that southwestern millers would use only the higher priced wheat under a higher ceiling.

Also, from the price standpoint, OPA officials were asked to make an announcement now that wheat ceilings would not be raised for some definite period running into next year. The sponsor of this idea offered it when it was divulged that farmers are believed to be holding back wheat stocks in anticipation of higher OPA ceiling prices or in a desire to divert income into the next tax year. OPA officials stated they did not feel free to make any such announcement as they cannot tell what changes in parity might occur during such a commitment. It is entirely possible that some ceiling adjustment may be necessary later for both wheat and corn, although OPA officials do not see the necessity at this time and will resist any ceiling change unless it is shown beyond all shadow of doubt that such an increase is necessary.

Farmer Holdings Heavy

Concerning farm holdings of wheat, USDA officials estimate that there still is approximately 500,000,000 bus in producers' possession.

Although wheat supplies have not reached a crisis as far as the southwestern mills are concerned, that time is seen as not more than 60 days off. Many unmeasurable factors could easily sustain the contentions of the millers' committee. For example, one USDA official estimated that over-all export demand for flour will require approximately 27% of milling capacity. Another intangible is the disappearance of wheat for feed on farms, particularly now that protein supplements are difficult to obtain. When farmers are affluent and facing higher tax rates during the present year, there will be a disposition to feed wheat to livestock and to poultry rather than make sales, one official explained.

Within the major problem there is also seen another lesser but equally important problem for some millers and that is the necessity for obtaining various types of wheat for blending purposes. In determining a solution of the current tightness in supply and the potential critical over-all shortage, government officials will not only be called upon to provide for over-all relief, but they will have to make selective relief for millers whose requirements will need special types of wheat for their normal business.

Diminishing Supply

(Continued from page 9.)

from Hutchinson stocks, and there have been other criticisms of the terms of the selling.

CCC officials take the stand that the agency is not the cause of the wheat shortage and that it has its own export commitments laid out, which cannot be crippled by large scale disposal of CCC stocks.

"To Arrive" Only Source

Most mill wheat buying lately continues on the basis of future shipment with storage charges to be paid until date of shipment, generally two to three months away. Wheat bought this way costs around 1c a month above ceilings and earned mark-ups and offers no real guarantee that the wheat will be available when needed, but it is about the only way to cover flour sales now.

The only hope of important relief for the current situation is the generally held belief that the wheat movement will pick up after Jan. 1, when farmers will be operating in a new tax year. No doubt there will be some improvement next month, but whether it will be sufficient to fill the expanding holes is a matter of speculation.

—BREAD IS THE STAFF OF LIFE—

TWO ADDITIONAL VENDORS LISTED IN FLOUR SALES

Washington, D. C.—Two additional vendors were announced by the U. S. Department of Agriculture in its purchases of flour last week. Sixty-eight vendors are named in the first announcement, which appears on page 19 of this issue of The Northwestern Miller. The additional vendors, with the amounts sold and prices, are:

Blaine-Mackay-Lee Co., North East, Pa., 2,400,000 lbs at $3.655, f.o.b. mill, in 10½-oz burlap or 2.50-yd osnaburg.

Light Grain & Milling Co., Liberal, Kansas, sold an additional 960,000 lbs for December delivery. In the first announcement, this firm was listed as having sold 1,040,000 lbs at $2.95, f.o.b. Liberal.

—BREAD IS THE STAFF OF LIFE—

LUCIDOL CORP. BUILDS ADDITIONS TO PLANT

Buffalo, N. Y.—The Lucidol Corp. is erecting additions, costing around $50,000, to its plant in Tonawanda, Dr. Franciscus Visser't Hooft, vice president, announced.

A two-story addition to the main plant and a one-story experimental unit are being constructed.

"The new additions will provide the company with much-needed space for more efficient manufacture of its present vitamin concentrate and products for the flour industry, which Lucidol has been manufacturing for the last few years," Dr. Visser't Hooft said.

DOWN THRU THE YEARS... for 3 generations...

For the future, too, GOLDEN LOAF will always be the big value in uniform, strong, fine spring wheat flours.

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WESTERN STAR
KANSAS STAR
GOLDEN CREST

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Star performers in any bakery are these three dependable flours. For top quality bread and uniform, smooth production, you can't go wrong in selecting them.

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The WESTERN STAR MILL CO.
SALINA, KANSAS

MARKETS IN DETAIL

U. S. FLOUR MARKETS

THE SOUTHWEST

Kansas City: There is a fair interest in flour booking on the part of the domestic trade and a continued heavy demand from export quarters, most pronounced from Europe and Brazil at the moment. Most mills are not selling very heavily, however, because they are close to their unfilled order limit under the subsidy and have difficulty in getting wheat and bags.

Fairly good bookings were made early last week under the new December subsidy, yet total volume was substantially lower than it was at the corresponding time in the past two months. In good part this was due to lack of mill aggressiveness in selling, and a considerable number of millers were only filling orders that their regular customers sought and needed. In a few instances others were pushing a little for business and making occasional comparatively low quotations in spots, but generally prices were held at ceilings to 5c under.

Sales last week averaged 151% of capacity, reflecting the better business after the new subsidy announcement. This compares with 95% in the preceding week and 68% a year ago.

Large lots were scarce and moderate sized bookings were the rule. Some of the larger bakers were seeking flour and booked some business with hard winter wheat mills, some at around 4@5c under ceilings and some a little less. Neither the individual lots nor the total appeared to be large.

Export interest continued active, with further business done with Britain through the agency of private importers. The Netherlands Purchasing Commission was asking for offers and the Belgian government also was reported to be still interested in flour. Some mills were out of the market for export sales now, but others were in a position to take some business.

A feature of the export situation was the heavy inquiry from Brazil at what amounted to any quantity at full ceilings for shipment within 90 days, when duties will be suspended. Apparently the need for flour in Brazil is urgent enough for the government there to take some steps to provide shipping space, a previous bottleneck, and three ships are now available for flour, with the space being offered to millers in the past week. Indications were that some lots of 15,000 to 30,000 sacks might be worked.

Generally, Latin-American trade was not heavy, but scattered business was done in moderate lots. Cuba is expected to become a buyer again very soon, as stocks there are running down.

Clears continued scarce and strong, which had the effect of reducing the offerings of mixed cars with feed. There is a good demand from regular buyers of better type clears and little offered.

Flour production returned to near capacity levels, increasing four points to 98% at Kansas City. Millers, however, are somewhat apprehensive about future operating time unless wheat supplies improve.

Quotations Dec. 8, sacked: established brands of family flour $4.35@4.40, bakers short patent $3.37@3.41, standard patent $3.27@3.31, straight grade $3.26@3.31, first clears $3.20@3.30, second clears and low grade $2.90@3.10, soft winter short patent $3.53@3.58, cake flour $4.20@4.25, standard grade $3.30@3.35.

Ten mills report domestic business active, 9 fair, 2 quiet, 2 slow and 7 dull.

Oklahoma City: Sales ranged from 50 to 85% and averaged 60% compared with an 80 to 104% range the previous week and 70% average a year ago. Sales included some exports to the South American and other Latin countries, also a small amount of exports to Europe. Of the domestic sales, bakers took 70% and the family buyers 30%. Operations averaged 78% compared with 85% a year ago. Prices were practically unchanged. Quotations, sacks, delivered Oklahoma rate points, Dec. 8: hard wheat short patent flour $4@4.43, soft wheat short patent $4@4.43, standard patent $3.90@4.23, bakers, carloads, 13 point per cent protein $3.39, bakers in excess of 13 point per cent, 10c additional and 8c additional for enrichment; in trucks, bakers unenriched patent $3.75 and standard bakers $3.65.

Hutchinson: Despite broad interest by the domestic and export trade, few new flour contracts were closed last week. Quotations were not furnished on round lot bakery business because of the scarcity of desirable wheat. Mills endeavored to fill any actual needs of the established trade, however. Inquiry was fairly keen from the family trade and small lots were booked. Shipping directions satisfactory with sufficient boxcars provided.

Texas: While mills are not pressing sales of bakers flour, a good many regular customers had to be supplied; in addition, some mills booked liberal amounts of flour destined for export overseas. These items, together with the usual moderate steady volume of sales of family flour, added up to 150% of capacity with some mills, and the average was probably around 100%. Operations have picked up, and probably average at least 90% of capacity. Quotations Dec. 8: 100's, family flour, extra high patent $4.05@4.30, high patent $3.80@4.05; standard bakers, under .44% ash $3.52 (ceiling); first clears $3.15@3.30, delivered TCP.

Wichita: The boxcar situation continues to show improvement, enabling mills to get out shipments, but limited wheat supply still is a sales handicap to the mills, with farmers holding crops until 1946 to take advantage of better income tax rates. All Wichita mills operated full time, with directions ranging from 100 to 200% of capacity, for an over-all average of 150%. Sales were slow, although showing some improvement after the announcement of the December subsidy rate. One mill reports it will require from three to four months, running at capacity, to fill old contracts. Export inquiry was very brisk.

Salina: Announcement of an increase of 1½c in the subsidy rate for December resulted in eager buying of flour the first few days of the month. Later millers' interest in selling dropped off. Shipping directions continue to arrive in good volume.

Omaha: Mills reported flour sales very good last week. Seven firms said they could sell all the flour they could manufacture, with some saying they were extremely interested in ways and means to manufacture more flour.

Production continued at rapid pace. The majority of mills are operating seven days a week. Former impediments, such as manpower and boxcar shortages, were said to be fading from the over-all picture. Last week's subsidy enabled flour men to witness the highest rate thus far. Most mills said they booked some flour after the subsidy raise. Shipping instructions were received regularly. Mills said they were attempting to deliver about half the order of a new customer and three fourths what a regular customer would order.

Quotations Dec. 8: family short patent $3.92, standard patent $3.72, bakers short patents $3.38, high protein $3.28, fancy clears $3.02 and low grade clears $3.82.

THE NORTHWEST

Minneapolis: Bakers and family flour distributors were active buyers this past week, so much so that most spring wheat mills have booked just about as much flour as they can safely do, until some definite announcement is made as to the ending or continuation of the subsidy. Family flour buyers came in after the increase in the December wheat subsidy was made known and bought liberally, but millers say that shipping directions against this class of business are not as free as they would like to see them.

Inquiry from bakers was spotted. A good many companies wanted to add to their holdings, but others who were expected to buy seemed to hold back. Millers say they could have booked more business than they did, if they had wanted it. All are holding for ceilings, although they acknowledge that in some cases business has been accepted at 4@5c sack under.

The clear flour supply situation is becoming increasingly tight. There does not seem to be any surplus whatever of these grades, especially high proteins. Even the low proteins are moving freely, with less being offered to the feed trade than heretofore.

Bookings by spring wheat mills last week were around 236% of capacity, compared with 117% the week before, and 121% a year ago.

Interior mills, including Duluth: The larger companies report they are getting all the business they want at ceiling prices. They have more difficulty in getting wheat than flour orders. More cars are coming into the Northwest and grain movement from interior is increasing. An urgent demand for millfeed is reported from all stations.

Quotations Dec. 10: established brands family flour, enriched $4.30@4.46, high gluten bakery flours $3.54, bakery short patent $3.44; first patent $3.44, standard patent $3.34, fancy clear $3.24@3.34, first clear $3@3.10, second clear $2.70@2.90, whole wheat $3.30@3.54.

THE CENTRAL WEST

Chicago: There was a decided improvement in flour business last week. It was the usual post-subsidy buying and a good amount of business was done, sales ranging from a few cars up to round lots. Shipping directions also continued brisk. Only a fair amount of business was reported in family flour and deliveries were fairly good. Quotations Dec. 8: spring top patent $3.52@3.57, standard patent $3.42 @3.47, first clear $3.20@3.47, second clear $2, family flour $4.51; hard winter short patent $3.47@3.57, 95% patent $3.42@3.47, first clear $2.85@3.22; soft winter short patent $3.49@4.31, 95% patent $3.39@4.06, first clear $2.90@3.16.

St. Louis: New flour bookings were fairly good last week, although mills were not overanxious to book ahead. In many instances bookings were passed up awaiting further developments. Purchases made were mainly by the bakery trade for prompt to 120 days' shipment. There was no record of the government having bought in this market. High protein clears were in good demand at firm prices, but offerings were only fair. Low proteins were offered a little more freely at easier prices. Jobbers reported a fair amount of flour placed on the books for 120 days' shipment immediately following the announcement of the December subsidy; otherwise little was done.

Central states mills reported some new business with the announcement of the new subsidy rate for December. Bakeries were the principal buyers. Prices are firm at near the ceiling.

Quotations Dec. 8: soft winter wheat patent $4.05, cake flour $4.90, straight $3.80, family short patent $4.35, straight and 95% $4.35, first clear $3.32@3.75; hard winter bakers patents $3.50, family patent $3.65@3.90, straight and 95% $3.50@3.55, first clear $2.85@3.35; spring wheat patent, straight and 95% $3.50.

Toledo: Considerable fresh buying of flour is reported to have taken place on the announcement of the higher December subsidy. Mills experience some restraint in sales on account of heavy unshipped backlogs, difficulty in securing wheat, the car shortage and labor difficulties. Very little wheat coming out, and it is assumed that the farmers are holding back sales until after the first of the year because of taxes.

Cleveland: After the announcement of the new subsidy both jobbers and bakers stepped into the market and purchased as much flour as was being offered. Some mills did not contract at all. Spring wheat high glutens and first clears were very difficult to purchase, even at ceiling prices. Most mills were reluctant to book large amounts, and in many instances were remembering their regular trade only. Shipments are delayed, mills having more business than they can take care of. The car situation and scarcity of cotton bags have also caused a delay in shipments.

Bakers seem to be enjoying a very nice business. Labor is adequate, and whatever is baked is sold—no stale—which makes the bakery business very profitable.

Fats are more plentiful, but sweetening agents are very scarce.

Lack of white corn meal has caused an increased demand for family flour. The demand for family flour in general has picked up since the elimination of rationing on fats.

Quotations Dec. 8: spring wheat high gluten $3.76@3.86, short patent $3.66@3.76, standard $3.60@3.66, first clear $3.60; hard winter wheat short patent $3.65@3.76, standard $3.55@3.66; soft winter wheat short patent $4.20@4.53, intermediate $4@4.20, standard $3.56@3.66.

EASTERN STATES

Buffalo: A fairly good demand for flour is coming from the bakery and family trade. This increased steadily toward the end of last week. The pickup was attributed to the earlier announcement of the December subsidy, east and west of the Rockies. Light buying in recent weeks, and indications of a particularly heavy Christmas trade, also were factors which brought many bakers into the market to round out their stocks. Mills are receiving a heavier volume of directions. Some of the mill managers see no let-up in production problems for many months ahead, due to the almost certainty that export sales will continue heavy. Reports from abroad indicate that war damage has vastly cut down mill capacity and it will be a long time before mills, both in the Orient and Europe, will be able to resume their former production levels. Clears were up 5c.

Quotations Dec. 8, cottons: spring first patent $3.80, spring standard patent $3.70, spring first clear $3.60; hard winter short patent $3.80, 95% patent $3.70, first clear $3.55; soft winter short patent $3.81, first clear $3.45.

New York: Lack of supplies kept the flour business to moderate figures last week. Buyers were eager to purchase and brokers reported firm offers in hand, but even at ceilings, mills refused acceptance, particularly for December-January shipment. Nearly all offers of high glutens were withdrawn, but numerous lots of a few thousand sacks of spring standards and hard winter short patents were sold to regular customers. Although the amounts requested were frequently reduced by the mill, most brokers reported that all of the requirements of their steady trade were filled adequately. Many foreign countries again sought flour, but here, too, mills accepted only a fraction of the business offered.

Quotations Dec. 8: spring high glutens $3.95, standard patents $3.70@3.75, clears $3.60@3.70; hard winter short patents $3.80 @3.85, standard patents $3.70@3.75, clears $3.45@3.60; soft winter straights, Pennsylvania $3.75, Pacific coast $3.77@3.79.

Boston: New flour business is confined to small lots for fill-in needs. Buyers are not interested in doing more than to maintain 90 to 120 days' supply on the books, while mills are reluctant to accept business beyond the latter amount. Both buyers and sellers are interested in the possible termination date for subsidies, and anticipate that they will continue to June 30, 1946. Bakers see nothing to be gained in contracting beyond 120 days, since they believe that an earlier termination date would only mean imposition of windfall taxes on flour holdings. Volume of business the past week was unusually light, with anything larger than minimum carlot orders hard to uncover. Spring patents held a slight edge over other types. Family flour sales were again disappointing to sellers. Shipping instructions are being scheduled for arrival after the first of the year. Mill quotations were firm and usually at ceilings. Quotations Dec. 8: spring high gluten $3.95@3.97, short patent $3.84@3.87, standard patent $3.74@3.77, first clears $3.55@3.60; southwestern short patent $3.84 @3.87, standard patent $3.74@3.77; Texas short patent $3.84@3.87, standard patent $3.74@3.77; soft winter patent $3.70@3.80, straight $3.60@3.70, clears $3.50@3.60.

Philadelphia: Little change occurred in the flour market the past week. The slight advance in the December subsidy created only a moderate additional inquiry, and there was not enough play to allow mills to make any discounts of attractive proportions. Offerings are light, and uncertainty with regard to the termination of the subsidy causes the mills to hesitate in accepting new business beyond December and January shipment. If the subsidy is to be discontinued next June 30, it will be necessary for the mills to be notified by Feb. 20. Until clarification takes place, it is expected that an increasing number of the mills will limit their sales during the coming weeks. Bakers are showing little interest, and in most cases are booked ahead for a considerable period.

Quotations Dec. 8: spring wheat short patent $3.83, standard patent $3.73, first spring clear $3.55@3.65; hard winter short patent $3.83, 95% $3.73; soft winter straights, nearby $3.45@3.50.

Pittsburgh: Flour bookings were light the past week. Many mills withdrew from the market, while others continued to quote full ceiling prices. Mill representatives are not pressing for business, preferring to await further developments in the subsidy situation. Family flour sales are nil. High glutens and clears continue in light supply. Cake flour is also offered sparingly. Needs of old customers only are supplied by the majority of flour mill representatives. Bakers report a soaring demand for every type of their products, with only the shortages in their baking materials limiting sales. Directions are good. Some relief in receiving shipments nearer to scheduled time is noted here.

Quotations Dec. 8: hard winter bakers short patent $3.70@3.80, straight $3.65@ 3.70, high gluten $3.90, first clear $3.50@

SUMMARY OF FLOUR QUOTATIONS

Week-end flour quotations, per sack, packed in 100 lbs. (Canadian quotations per bbl of 196 lbs.) All quotations on basis of carload lots, prompt delivery.

	Chicago	Mpls.	Kans. City	St. Louis	Buffalo
Spring first patent	$3.52@3.57	$...@3.44	$...@...	$...@3.50	$...@3.80
Spring standard patent	3.42@3.47	...@3.34	...@...	...@3.50	...@3.70
Spring first clear	3.20@3.47	3.00@3.10	...@...	...@...	...@3.60
Hard winter short patent	3.47@3.57	...@...	3.37@3.41	...@3.50	...@3.80
Hard winter 95% patent	3.42@3.47	...@...	3.27@3.31	3.50@3.55	...@3.70
Hard winter first clear	2.85@3.22	...@...	3.20@3.30	2.85@3.35	...@3.55
Soft winter short patent	3.49@4.31	...@...	2.90@3.10	...@4.05	...@3.81
Soft winter straight	3.39@4.06	...@...	3.30@3.35	...@3.80	...@...
Soft winter first clear	2.90@3.15	...@...	...@...	3.32@3.75	...@3.45
Rye flour, white	...@...	4.35@4.45	...@...	...@5.08	...@4.65
Rye flour, dark	...@...	3.75@3.90	...@...	...@4.58	...@4.15
Semolina, No. 1	...@3.75	...@3.62	...@...	...@3.99	...@3.98

	New York	Phila.	Boston	Cleveland	†Nashville
Spring first patent	††$...@3.95	$...@3.83	$3.84@3.87	$3.66@3.76	$...@...
Spring standard patent	3.70@3.75	...@3.73	3.74@3.77	3.60@3.66	...@...
Spring first clear	3.60@3.70	3.55@3.65	3.55@3.60	3.60@...	...@...
Hard winter short patent	3.80@3.85	...@3.83	3.84@3.87	3.65@3.76	...@...
Hard winter 95% patent	3.70@3.75	...@3.73	3.74@3.77	3.55@3.66	...@...
Hard winter first clear	3.45@3.60	...@...	...@...	...@...	...@...
Soft winter short patent	...@...	...@...	3.70@3.80	4.20@4.53	...@4.69
Soft winter straight	...@3.75	*3.45@3.50	3.60@3.70	3.56@3.66	4.70@4.95
Soft winter straight (Pac. cst.)	3.77@3.79	...@...	3.50@3.60	...@...	...@...
Soft winter first clear	...@...	...@...	...@...	...@...	4.25@4.55
Rye flour, white	4.50@4.67	4.65@4.80	...@...	...@...	...@...
Rye flour, dark	...@...	...@...	...@...	...@...	...@...
Semolina, No. 1	...@4.03	...@4.03	...@...	...@...	...@...

	Seattle	S. Francisco
Family patent	$...@...	$...@...
Soft winter straight	...@...	...@...
Pastry	...@...	...@...
Dakota std. patent	...@...	...@...
Montana std. patent	...@...	...@...

	Toronto	**Winnipeg
Spring top patent‡	$...@5.05	$...@5.30
Spring second patent‡	...@4.40	...@4.80
Spring first clear‡	...@3.30	...@...
Spring export§	...@11.35	...@...
Ontario soft winters‡	...@5.50	...@...
Ontario exports§	...@6.25	...@...

*Includes near-by straights, †Nashville prices basis, f.o.b. Ohio River points for soft winter wheat flour. **In cottons, Fort William basis. ‡Secondhand cottons. §98-lb cottons, §280-lb cottons. ††High glutens.

3.55; spring bakers short patent $3.78@3.80, standard $3.68@3.70, high gluten $3.90, first clear $3.55@3.60; soft winter bakers cake flour $4.35@4.60, intermediate grade $4.10@4.35, straight $3.67@3.70; Pacific coast $3.73, family flour $4.10@4.71.

THE SOUTH

Nashville: Millers and flour brokers report that business last week was not as good as it was the previous week. The usual day-to-day sale of a car or so of patent grades, both soft and hard, was made but few, if any, bookings were indicated. Majority of buyers in this market have flour contracted some 60 days ahead and some are booked for 120 days. Wheat is still hard to secure and mills did not push in order to make sales. Outbound shipments to merchants, jobbers and wholesalers in the South and Southeast range from slow to good. This is the usual lull before the Christmas holiday, as the buyers do not want heavy stocks on hand the first of the year. All bakery products are selling unusually well. The demand for fruit-cake has been exceptionally good and very little home baking is being done, due largely to the scarcity of sugar. Larger bakers are well covered for some 120 days and made no purchases this week. Flour prices are about unchanged from a week ago.

Quotations Dec. 8: soft wheat cake flour $4.69; soft wheat cake flour, not over .41% ash $4.02; soft wheat cake flour, .41% or more ash $3.79; short patent family flour $5.10@5.20; standard patent $4.95@5.10, straight $4.70@4.95, clear $4.25@4.55.

PACIFIC COAST

Portland: A steady flour trade is reported, both in export and domestic fields. Mills last week were able to book for January shipment to the Atlantic seaboard as a result of offerings of space by the War Shipping Administration. Lack of space to Hong Kong and Shanghai is restricting sales there, although some sales have been reported to both points. Some progress has been made in terms of credit and exchange, thus opening up some trade. Limited space has held down bookings, however. Local bookings have shown improvement as a result of the new subsidy.

Quotations Dec. 8: all Montana $3.62, high gluten $3.57, bluestem bakers $3.32, bluestem topping $3.25, cake $3.35, pastry $3.02, pie $3.02, fancy hard wheat clears $3.25, whole wheat 100% $3.26, graham $2.93, cracked wheat $2.95.

CANADIAN MARKETS

Toronto-Montreal: Following an announcement by the Canadian wheat board of an export price for January, all the flour mills can supply in that month was booked by the British Ministry of Food. At first there was an impression in the trade that the newly announced wheat price covered February and March also and some flour bookings were made for the later months, but these had to be cancelled when it was learned that the price applied to January only. The January export price for flour is 9c higher than the December quotation. Sales of flour in home markets are up to normal for this time of year and business goes along steadily with little interruption. Domestic prices are at ceiling levels. Quotations Dec. 8: for export, government regulation flour $11.44 per 280 lbs, f.a.s., Atlantic winter ports; top patents for use in Canada $5.05 bbl, seconds $4.40, bakers $4.30, in 98's cotton, mixed cars, track, Toronto-Montreal freights, 10c extra where cartage is performed.

The winter wheat flour market is quiet. Biscuit manufacturers have been buying fair quantities and are now supplied until after the holiday season. Export business is at a standstill. This flour is too dear to attract much buying from the West Indies, at present the main export outlet. The ceiling is the price. Quotations Dec. 8: standard grades of soft winters $5.50 bbl, secondhand cottons, Montreal freight basis, for export $6.25 bbl, cotton bags, Canadian seaboard, plus equalization fee of $1.75.

A little Ontario winter wheat is finding its way to market. Most mills still have stocks on hand from quantities bought early in the season. Sales are at ceiling levels. Quotations Dec. 8: best grades $1.26 bu, Montreal freights, which is equivalent to $1.12@1.14 bu, f.o.b. shipping points in Ontario.

Winnipeg: Export business in Canadian flour last week was equivalent to 2,000,000 bus in terms of wheat, and all of this was recorded worked to the United Kingdom. Small lots went to the West Indies and the Philippines. Mills are booked up to the end of December. Quotations Dec. 8: top patent springs for delivery between Fort William and the British Columbia boundary $5.30, cottons, second patents $4.80, second patents to bakers $4.60.

Vancouver: Outside of some small parcels loaded on an American steamer here during the week for Manila, no export business for private account was reported in local flour circles. Another ship for Manila is posted to arrive later this month and will take a fair shipment of Canadian flour, but no vessels for other countries bordering on the Pacific have been offering any flour space.

In the domestic trade shortage of shortening continues to hit commercial baking very sharply and so scarce has this commodity become that home baking is almost a forgotten art. This is expected to have a material effect on the volume of cakes for the holiday trade and some of the smaller shops are only baking a couple of days per week.

Prices hold unchanged at ceiling levels. In the hard wheat flour trade distributors are still unable to secure certain sizes from western mills. Cash car quotations as of Dec. 8 in cotton 98's: first patents $5.40; second patents $5; vitamin B $4.90. Soft wheat flour from Ontario mills is mov-

WINTHROP LABORATORY PLAN—Plans for the construction of new research laboratories, costing more than $2,000,000, for the Winthrop Chemical Co. were recently announced by Dr. Theodore G. Klumpp, as he disclosed the purchase of a 60-acre site in Rensselaer, N. Y., for that purpose. This architect's drawing shows the completed plant which will have more that 150,000 square feet of floor space in the three wings. Construction work will begin next spring, and the structure is expected to be completed within a year thereafter. Situated close to Winthrop's present plant and laboratory facilities, the new building will replace the existing research laboratories. Dr. Klumpp stated that when Winthrop moves to its new quarters, 350 scientists would be employed exclusively on research, as compared with the present 175.

OATMEAL MARKETS

Toronto-Montreal: Rolled oats and oatmeal are in moderate demand. Domestic sales are up to normal, but there have been no export orders recently. Quotations: rolled oats $3.15 bag of 80 lbs, cotton, in mixed cars; oatmeal in 98-lb jutes $3.85 bag, f.o.b. Toronto or Montreal.

Winnipeg: Domestic demand for rolled oats and oatmeal continues on a good scale despite the continuing mild weather, and mill output has increased to take care of this added demand. This is a seasonal increase in demand, however, and sales are comparable with this time a year ago. Quotations Dec. 8: rolled oats in 80-lb sacks $3.25, in the three prairie provinces; oatmeal in 98-lb sacks, 20% over rolled oats.

Minneapolis: Rolled oats were quoted on Dec. 10 at $5.05 per 100 lbs, bulk; 20-oz packages $2.65 case, 48-oz packages $2.89.

Bonded Grain in the United States

Bonded grain in the United States Dec. 1, 1945, in bushels (000's omitted):

	Wheat	Oats	Rye	Barl'y
Baltimore	3,038	3	..	..
Buffalo	8,981	1,903	58	120
Afloat	4,866	1,632	..	..
Chicago	..	132	..	..
Afloat	..	..	246	..
Duluth	..	..	59	387
Lakes	3,324	..	62	..
Milwaukee	..	..	..	190
New York	2,625	326	..	..
Afloat	433	334	..	..
Philadelphia	2,014	..	..	..
Totals	25,281	4,330	425	697
Nov. 24, 1945	19,469	3,420	858	752
Dec. 2, 1944	28,654	8,740	715	1,101

Flaxseed Receipts, Shipments and Stocks

Receipts, shipments and stocks of flaxseed at principal primary points for the week ended Dec. 8, in thousand bushels, with comparisons:

	Receipts		Shipments		Stocks	
	1945	1944	1945	1944	1945	1944
Minneapolis	294	150	9	8	4,941	2,830
Duluth	200	19	840	97	1,592	396

GRAIN FUTURES—CLOSING PRICES

Closing prices of grain futures at leading markets, in cents per bushel:

WHEAT

	Minneapolis		Chicago		Kansas City		Seattle		Duluth	
	Dec.	May	Dec.	May	Dec.	May	Dec.	May	Dec.	May
Dec. 4	172⅛	172⅛	180⅛	180⅛	170⅝	170⅝	....	....	173	173
Dec. 5	172⅛	172⅛	180⅛	180⅛	170⅝	170⅝	....	....	173	173
Dec. 6	172⅛	172⅛	180⅛	180⅛	170⅝	170⅝	....	....	173	173
Dec. 7	172⅛	172⅛	180⅛	180⅛	170⅝	170⅝	....	....	173	173
Dec. 8	172⅛	172⅛	180⅛	180⅛	170⅝	170⅝	....	....	173	173
Dec. 10	172⅛	172⅛	180⅛	180⅛	170⅝	170⅝	....	....	173	173

	CORN						OATS			
	Minneapolis		Chicago		Kansas City		Chicago		Minneapolis	
	Dec.	May	Dec.	May	Dec.	May	Dec.	May	Dec.	May
Dec. 4	....	....	118½	118⅛	....	....	73⅞	74⅛	67⅝	68⅝
Dec. 5	....	....	118½	118⅛	....	....	75½	75⅛	68⅝	70
Dec. 6	....	....	118½	118⅛	....	....	74⅝	75⅛	68⅝	69⅞
Dec. 7	....	....	118½	118½	....	....	75½	75⅝	69⅝	70⅝
Dec. 8	....	....	118½	118½	....	....	77⅝	76⅝	71⅝	71⅝
Dec. 10	....	....	118½	118½	....	....	78⅛	76¾	71⅝	71½

	RYE				FLAXSEED				BARLEY	
	Chicago		Minneapolis		Minneapolis		Duluth		Minneapolis	
	Dec.	May	Dec.	May	Dec.	May	Dec.	May	Dec.	May
Dec. 4	174⅞	165¼	169	159	....	....	....	....	....	....
Dec. 5	179	166¼	171	157½	....	....	....	....	....	....
Dec. 6	175¼	162⅝	170½	156	....	....	....	....	....	....
Dec. 7	177	164¼	169	156¼	....	....	....	....	....	....
Dec. 8	181¼	167¼	172	160	....	....	....	....	....	....
Dec. 10	182⅝	167⅝	174½	160½	....	....	....	....	....	....

UNITED STATES VISIBLE GRAIN SUPPLY

Visible supply of grain in the United States, as compiled by the secretary of the Chicago Board of Trade, in bushels (000's omitted) of date Dec. 1, and corresponding date of a year ago:

	Wheat		Corn		Oats		Rye		Barley	
	1945	1944	1945	1944	1945	1944	1945	1944	1945	1944
Baltimore	5,149	5,602	82	67	87	24	365	85	4	6
Boston	954	..	..	..	..	..	358	..	..	..
Buffalo	6,280	11,733	49	822	7,482	5,557	140	443	863	1,149
Afloat	6,339	7,497	303	..	2,074	328	..	..	82	..
Chicago	2,923	5,495	1,735	4,636	5,742	1,741	2,049	9,174	1,232	1,894
Afloat	..	926	..	..	..	..	..	..	..	..
Duluth	9,216	8,627	87	235	2,490	3,845	72	903	3,863	11,219
Fort Worth	6,044	13,496	83	159	519	164	5	46	77	90
Galveston	1,886	4,034	..	..	..	..	..	..	..	..
Hutchinson	9,889	9,932	..	..	..	..	..	..	557	..
Indianapolis	1,772	1,246	489	1,365	417	177	6	62	13	..
Kansas City	27,013	28,881	569	1,555	1,426	95	158	295	165	1,239
Milwaukee	257	931	14	110	41	3	..	..	3,942	4,102
Minneapolis	1,973	15,428	130	357	13,703	1,838	1,134	1,700	7,158	8,717
New Orleans	227	860	24	1,290	63	62	31	..	..	56
New York	574	770	36	6	654	7	1	2	..	1
Omaha	9,233	9,611	1,826	1,538	2,975	850	220	43	418	1,282
Peoria	..	91	205	133	..	..	..	..	..	184
Philadelphia	1,876	2,050	52	201	56	22	85	..	..	..
St. Louis	3,817	3,886	497	903	1,319	153	13	39	21	192
Sioux City	33	318	746	142	537	156	4	17	..	47
St. Joseph	3,022	3,603	296	628	1,324	365	2	..	88	47
Wichita	5,798	6,094	1	2	33	1	..	..	53	172
Lakes	1,216	1,983	..	140	..	..	..	..	..	..
Totals	105,491	143,094	7,224	14,439	41,442	15,388	4,643	12,879	18,526	30,397

The Coming Relaxation of

COMMODITY MARKET RESTRICTIONS

Two developments of great importance are obviously getting nearer:

1. Re-opening of futures markets still closed because of world conditions—creating enlarged interest in commodity trading as a whole.
2. Elimination of "ceilings", "floors", and other restrictions on free price movements.

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WANTED AT ONCE—CAPABLE SECOND miller in modern 1,400-bag spring wheat mill. Pleasant working conditions. Good Minnesota town. Good opportunity and permanent place for the right man. Address 7679, The Northwestern Miller, Minneapolis 2, Minn.

WANTED — EXCELLENT OPPORTUNITY for experienced head miller in large mill. Must take full responsibility for mill operations and quality production. Please give full information as to experience, ability, salary desired, etc., in first letter. Address 7680, The Northwestern Miller, Minneapolis 2, Minn.

WANTED—PLANT ENGINEER TO TAKE charge of boiler room, process steam only, electrical sheet metal, maintenance and service departments in large mill. Please give full information as to experience, ability, salary desired, etc., in first letter. Some knowledge of grain milling preferable, but not necessary. Good opportunity for the right man. Address 7681, The Northwestern Miller, Minneapolis 2, Minn.

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COLLEGE GRADUATE IN MILLING technology and chemistry class 1939, desires position with large milling concern. Experience in milling, laboratory work, and engineering. Served 3½ years in U. S. Navy. Past two years as chief engineer on Diesel powered destroyer escort. Address 7675, The Northwestern Miller, Minneapolis 2, Minn.

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WANTED—ONE (1) USED BAG SEWING machine, good condition. Address 7668, The Northwestern Miller, Minneapolis 2, Minn.

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MILLFEED MARKETS

Minneapolis: The supply situation throughout the Northwest is as tense as ever. The current heavy production hardly makes a dent in the demand, and zero temperatures seem to increase the mill door demand, leaving less and less for shipment. Lacking millfeed, mills are grinding a lot of oats and wheat, but cannot offer enough of the latter to take care of demand. The trade is entering the heavy consumptive period with little or no surplus on hand, so no let-up in inquiry is anticipated, and millers are not interested in the increasing number of bids received for spring and summer shipment. Millfeed at present ceiling is still the least expensive item on the feed list. Ceiling: $37.75.

Kansas City: Only new feature in the tight millfeed situation is evidence that millers are catching up on old contracts, probably because of holding back on fresh offerings, slower family flour trade and improvement in boxcars available. This may presage somewhat freer offerings when the old bookings are completed, and apparently has already in a few instances. However, there is no let-up in the extremely heavy demand, which far exceeds offerings, and mixed cars with clear and ground continue to dominate the market; carlot ceiling $36.50.

Fort Worth: Production getting back toward full capacity but this is not bringing any noticeable relief of the acute deficiency in supplies. Quotations: ceiling, wheat bran and gray shorts $42.20, sacked, del. TCP.

Hutchinson: Demand for millfeed brisk and wholly beyond ability of the mills to supply. Quotations continue at ceiling: $36.50@37.50 for bran, mill run and gray shorts.

Omaha: Last week's supply was very short as it has been in this area for months. Offerings of any kind were extremely scarce. The needs of the trade cannot be met and demand is heavy throughout the middlewest. Only a fraction of the demand is being supplied. Quotations: $36.50, $37.50 l.c.l., ceilings.

Wichita: Demand shows no decrease. With mills running at capacity, offerings are absorbed by old contracts. A substantial amount is going to the mixed car trade, with flour. Quotations, basis Kansas City: straight cars $36.50, mixed cars $37.50 ton.

Salina: Demand is excellent with trend steady and supplies inadequate. Bran and shorts remain at ceilings.

Oklahoma City: Brisk sales are reported with scarcity of supplies. There was no change in prices. Quotations, burlaps, for southern deliveries: bran, mill run and shorts $1.95 cwt; for northern deliveries: $1.90.

Toledo: Market shows no change, nor is any in sight or expected. All millfeeds remain at ceiling levels, $42.37, bulk, f.o.b. Toledo.

Cleveland: Feed has been so scarce this past week that truckers have been disappointed. If there is to be any relief it will happen after the turn of the new year. All feed is sold at ceiling prices—$42.90 ton.

Buffalo: The situation in millfeeds continues very tight with demand far ahead of supplies. New offerings on the part of mills are almost nil with current output being offered against previous commitments. Trend is very firm. Quotations: all varieties $41.55, straight carlots, f.o.b. Buffalo.

Pittsburgh: Millfeed situation remains "terrible." Jobbers say supplies more limited the past week with greatly increased demand. Corn offerings far below estimated figures. Wheat offerings extremely light, with only oats offered in sufficient amounts to meet demand. Spring bran, midds., red dog, ceiling $44.85, but not sufficient offerings to warrant mention.

Philadelphia: Demand is good and the market is firm, with supplies light. Quotations: std. bran, pure spring, hard winter, soft winter, std. midds., flour and red dog, all $44.84@45.34 ton.

Boston: Demand continues unabated and mills, in spite of heavier production, are unable to satisfy it. Movement of corn to terminals has not been heavy enough to ease the demand for millfeeds. Spring bran, midds., mixed feed, red dog $45.67@46.17 ton.

Nashville: Demand for millfeed is not quite as heavy since the majority of hogs in this section have been killed; however, inquiries still take up all offerings that are made and generally most millfeed is available only in mixed cars of flour. Prices continue at the ceilings. Bran and shorts are quoted $43.30@44.30 ton, f.o.b. Nashville.

Portland: Mill run, bran, shorts, midds. $36.50 ton.

Ogden: Millfeed demand continues to exceed supplies with plants sold up through January and February. Mills are operating to capacity seven days per week seeking to keep up with bookings. Quotations (unchanged): red bran and mill run, blended, white and midds. $36.30, carload lots, f.o.b. Ogden. Denver prices: $37, ceiling. California prices: $42.08, carlots, f.o.b. San Francisco, with Los Angeles prices up $1, ceiling.

Toronto-Montreal: Demand for millfeed continues unabated. It is the cheapest feed available and the requirements of domestic buyers cannot be fully met, although production is at record levels and only a small percentage is allowed to go for export. Quotations Dec. 8: domestic ceiling, bran $29, shorts $30, midds. $33 ton, net cash terms, bags included, mixed or straight cars, Montreal basis.

Winnipeg: There was very little movement in millfeed, with most amounts being taken by eastern Canada. Sales in the three prairie provinces are unimportant. Quotations: Manitoba and Saskatchewan bran $28, shorts $29; Alberta bran $25.50, shorts $26.50. Small lots ex-country elevators and warehouses $3 extra.

Vancouver: Supplies from western mills continue to be on the light side and with an increasing domestic demand, dealers are unable to keep any stocks on their floors. The heavier millfeed demand results from heavier winter feeding and the continued high cost of feed grains as compared with millfeed, especially for mashes. Cash car prices are unchanged; bran $29.80, shorts $30.80, midds. $33.80.

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RYE PRODUCTS

Minneapolis and interior Minnesota: Weakness in grain brought about a reduction of 29c sack in rye flour quotations last week, and of 53c sack from the high point on Nov. 20. But even this abnormal break did not bring in as much business as might be expected, considering how slim the unfilled bookings are. There was a little more buying done than in recent weeks, but it was still mostly carlots. Buyers are impressed with the comparatively low ceiling price set by the government, but, although this does not become effective until June 1 next, the trade evidently expect values will work down closer to the ceiling level, so are not contracting in advance of needs. Pure white rye flour $4.35@4.45 sack, in cottons, f.o.b. Minneapolis; pure medium $4.25@4.35, pure dark $3.75@3.90.

Buffalo: Demand for rye flours is lagging somewhat. Supply is fair. Trend is firm. Quotations, cottons: white $4.65, medium $4.55, dark $4.15.

Pittsburgh: Fair sales of rye flour were made here the past week when prices fell below the $5 mark. Buyers did not cover freely, and the rapid fluctuations in rye flour prices proved almost as disturbing to the trade in forming any decisions to replenish their rye flour stock liberally, as the high rye prices of the past few months. Rye flour, fancy white $4.70@4.80, medium $4.60@4.70.

Portland: Pure dark rye $4.69, medium $4.80, Wisconsin pure straight $5.61, Wisconsin white patent $5.91.

Philadelphia: The market for rye flour was irregular last week and considerably lower, running hot and cold due to sharp fluctuations in futures. Offerings are only moderate, but demand is limited and spotty. One or two sales noted down to $4.60, but at the close, holders asking a full 5@15c more. White patent $4.65@4.80.

Cleveland: Jobbers and bakers have witnessed a drastic decline in rye grain this past week; a decline that was wished for and of which most jobbers and bakers took advantage and purchased their needs for 60 days, thinking a break of 15c per bu was more than was to be expected at this time. With the new government ruling that the '45 and '46 rye crop ceiling will be $1.42 per bu for No. 2 rye at Chicago, June 1, 1946, this gives the rye bread baker a new lease on life. Quotations: patent white rye flour $4.50@4.80, medium rye flour $4.40@4.50.

St. Louis: Prices declined 43c last week. Sales and shipping directions were slow. Pure white flour $5.08, medium $4.98, dark $4.58, rye meal $4.83.

New York: Fair sales of rye flour were reported at the lower end of the range. Mills in the higher brackets indicated little turnover. Quotations: pure white patents $4.50@4.67.

Chicago: There was a slight improvement in business last week. Despite a break in prices, only a moderate amount of business was done. Shipping directions were fairly good. White patent rye $4.40@4.55, medium $4.30@4.45, dark $3.80@3.95.

Western Canada Visible Grain Supply

Visible supply of grain in the western inspection division Dec. 7, 1945, and receipts and shipments during the past week, in bushels (000's omitted):

Fort William and Port Arthur—	Wheat	Durum	Oats	Barley
Semi-public terminals	9,266	993	5,186	9,023
Private terminals	..	..	17	4
Winter storage afloat	..	..	..	206
Totals	9,266	993	5,203	9,232
Vancouver-New Westminster	9,379	..	471	228
Int. public and semi-public elevators	5,181	..	818	1,076
Churchill	1,878	..	..	..
Prince Rupert	1	..	..	..
Victoria	..	..	..	..
Totals	25,706	993	6,491	10,535
Year ago	49,698	1,561	3,475	4,717
Receipts during week—				
Ft. Wm.-Pt. Ar.	7,442	144	943	467
Pacific seaboard	1,582	..	3	17
All other public and semi-public terminals, western div.	11	..	19	199
Totals	9,035	144	965	683
Shipments during week—				
Ft. Wm.-Pt. Arthur—				
Lake	11,226	809	774	246
Rail	18	2	56	22
Pacific seaboard	919	..	28	21
All other public and semi-public terminals, western div.	176	..	43	6
Totals	12,339	810	900	295

TOTAL RECEIPTS
Aug. 1 to Dec. 7, 1945

Ft. Wm.-Pt. Ar.	134,714	2,655	27,500	30,807
Pacific seaboard	14,988	..	1,110	341
All other public and semi-public terminals, western div.	492	..	1,036	1,115

TOTAL SHIPMENTS
Aug. 1 to Dec. 7, 1945

Ft. Wm.-Pt. Ar.	175,376	3,008	34,986	24,514
Pacific seaboard	21,269	..	1,036	118
All other public and semi-public terminals, western div.	5,671	..	293	48

Rye Flour Output

Following is the rye flour output reported to The Northwestern Miller by mills at Chicago, Minneapolis and outside points in the Northwest, in sacks, with comparative figures for the previous weeks:

	Nov. 17	Nov. 24	Dec. 1	Dec. 8
Five mills	41,588	34,400	33,042	*29,522

*Four mills.

Millfeed Receipts and Shipments

Receipts and shipments of millfeed at the principal distributing centers for the week ending Dec. 8, in tons, with comparisons:

	Receipts 1945	Receipts 1944	Shipments 1945	Shipments 1944
Minneapolis	...	...	19,040	18,300
Kansas City	300	450	4,650	3,350
Philadelphia	244	280	...	...
Milwaukee	150	30	4,470	4,830

Care in Milling
Henkel's
EXTRA FANCY
CAKE FLOURS
Makes them "Easy-to-Handle" in Baking
★
THE HENKEL FLOUR MILLS
DETROIT, MICHIGAN

American Ace
—A very fine, short, strong patent milled in one of the West's very finest flour mills.
American Flours, Inc.
NEWTON, KANSAS

Cable Address "RAYBAR"
TIDEWATER
GRAIN COMPANY
Receivers - Shippers - Exporters
Export and Domestic Forwarders
Members all leading Exchanges
Established 1927
Bourse Building PHILADELPHIA 6, PA.
Chamber of Commerce BALTIMORE 2, MD.

King Milling Company
High Grade Michigan Soft Wheat Flour, Plain and Self-Rising
Successful Millers for Fifty Years
LOWELL, MICHIGAN

CHARLES H. KENSER
Member Omaha Grain Exchange
MILLING WHEAT
MILLFEED • CLEARS
440 Omaha Grain Exchange
OMAHA, NEBRASKA

WE ARE LARGE BUYERS
of PURIFIED MIDDLINGS
and PURIFIED WHEAT GERM
We will be glad to get your quotations
The Cream of Wheat Corporation
Minneapolis, Minnesota

FINGER LAKES AND HUDSON
FLOUR MILLS, Inc.
Geneva, N. Y.
WHEAT FLOUR
Mills At
RYE FLOUR
GENEVA, N. Y.
TROY, N. Y.

DIXIE LILY
A flour without an equal anywhere
Plain and Self-rising
THE BUHLER MILL & ELEVATOR CO.
BUHLER, KANSAS
Southern Sales Office
983-35 Exchange Bldg., Memphis, Tenn.

Our Migrant Population

(Continued from page 28.)

related with various indexes of economic activity or levels of living. Thus, as measured by the proportion of workers in the manufacturing and mechanical industries and by value added through manufacturing per plant or per capita, industry in the South developed more rapidly than that in the North or the West during the course of this century. Nevertheless, the South, at least to 1940, was considerably below the level of industrialization attained in either the North or the West. Moreover, the South, on the basis of such fragmentary data as exist, had considerably lower per capita incomes in both urban and rural areas than either the North or the West.

"It has been ably demonstrated that a stable or declining population need not necessarily be accompanied by low levels of living or by economic apathy. The economic experience of France and Sweden, as well as that of northeastern United States, compared with that of rapidly growing populations in other parts of the world, as for example, southeastern Europe, India or China, should make perfectly clear the fact that rate of population growth can in no way be interpreted as a complete index of economic level either in fact or in prospect. In short, there are good reasons for asserting that a busy population with progressively higher standards of living need not be also an increasing population."

—BREAD IS THE STAFF OF LIFE—

World Rice Crop May Be 10% Below Average

Washington, D. C.—World output of rice in 1945-46 may be smaller than in the preceding year and more than 10% less than the annual average in the five years prior to 1940, according to the United States Department of Agriculture's Office of Foreign Agricultural Relations.

The total world crop is forecast tentatively at 6,500,000,000 bus, compared with 6,800,000,000 the year before, and 7,400,000,000 for the 1935-1940 period.

Smaller Asiatic production is primarily responsible for the decline. North America is the only continent showing an increase. Growing conditions in Central America have been favorable for increased production, but Cuba's crop is about 15% smaller than last year's relatively small output.

While rice acreage in the Orient possibly is only moderately less than a year ago, unfavorable weather and wartime disturbances have resulted in low per acre yields. The Free China crop is reported smaller than in 1944, while the harvest in India, producer of one fourth of the world total, is forecast to be about the same as a year ago. The Japanese crop is believed considerably smaller than last year, and from 70 to 75% of prewar. A surplus is reported available for export from Korea.

Africa's crop may approximate last year's harvest, and that of Australia should be larger than in 1944 when yields were curtailed by drouth. No South America forecast is yet possible since most 1945-46 acreage will not be harvested until the first half of 1946.

The ROBINSON MILLING COMPANY
SALINA, KANSAS

SPRING WHEAT FLOURS
RED WING SPECIAL
BIXOTA
CREAM of WEST
PRODUCE BREADS WITH TASTE APPEAL
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RED WING, MINNESOTA
Wheat Washed with Our Own Artesian Well Water.
Flour Tested and Baked in Our Own Laboratory.

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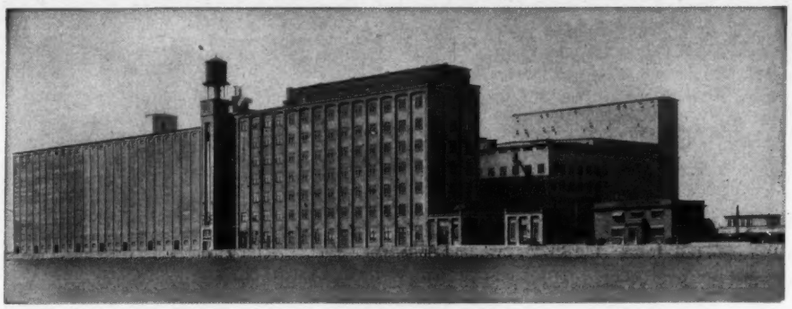

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MILLS AT
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CHOICEST CANADIAN *Hard Spring Wheat*

and perfect milling facilities have placed our products in the van.

BRANDS

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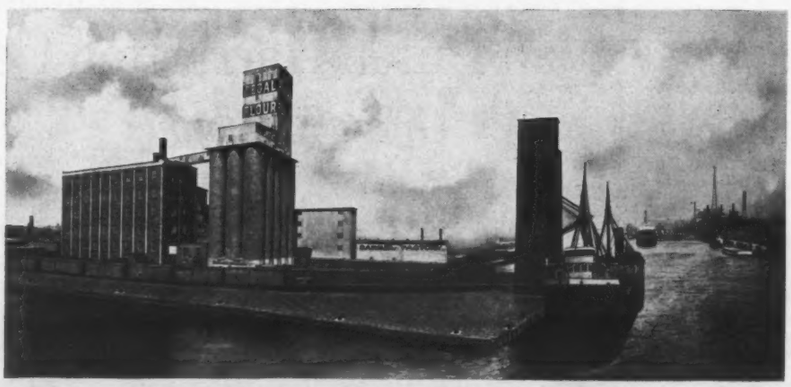
THE DOMINION FLOUR MILLS, LTD.

Cable Address: "DOMFLOUR" MONTREAL, CANADA

The St. Lawrence Flour Mills Co., Ltd.

MONTREAL • CANADA



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"Fleur de Lis"
"National"
"Daily Bread"
"Citadel"

Quality uniformly maintained for over 25 years

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CABLE: LAKURON TORONTO, CANADA

SPECIALISTS IN MILLING

All Western Canada Hard Wheat Flours

PURITY • THREE STARS
CANADA CREAM • STERLING

GREAT WEST
BATTLE
MAITLAND
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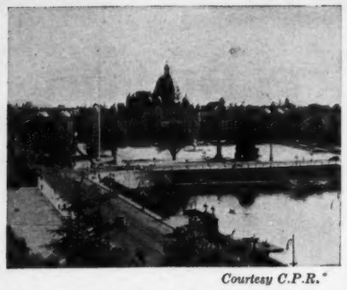
UNIFORM QUALITY GUARANTEED

FLOUR MILLING CAPACITY 9500 BBLS DAILY • ROLLED OATS AND OATMEAL 400 BBLS DAILY



Courtesy C.P.R.

VICTORIA, BRITISH COLUMBIA

Possessing one of the finest harbours in Canada, the port of Victoria, consisting of three harbours, the Outer Harbour, the Inner Harbour and Esquimalt Harbour, is particularly important to Canada.

Capital of British Columbia, Victoria has an impressive group of fine buildings, of which the Provincial Parliament Buildings are the most imposing.

Noted for its marvellous year 'round climate, Victoria has gained particular recognition as a tourist centre. It is considered to be the most English of all Canadian cities—a particularly charming place to live.

Strategically located on Vancouver Island on Canada's West Coast, Victoria is an important shipping centre to Australia, New Zealand, Dutch East Indies and Asiatic countries. Its many industries, closely allied to the natural resources of the Island, are important.

JUTE BAGS COTTON

OLDEST ESTABLISHED MANUFACTURERS OF

JUTE **BAGS** COTTON

IN CANADA

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Head Office. MONTREAL, QUEBEC

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WOODS MFG. CO. LTD

COTTON AND JUTE BAGS

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Saskatchewan and Alberta

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SPRING WHEAT FLOUR

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Mills Limited

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TELCO
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TORONTO ELEVATORS
LIMITED
Toronto Canada

TEXTILE MILLS IN SOUTH REPORT LABOR SHORTAGE

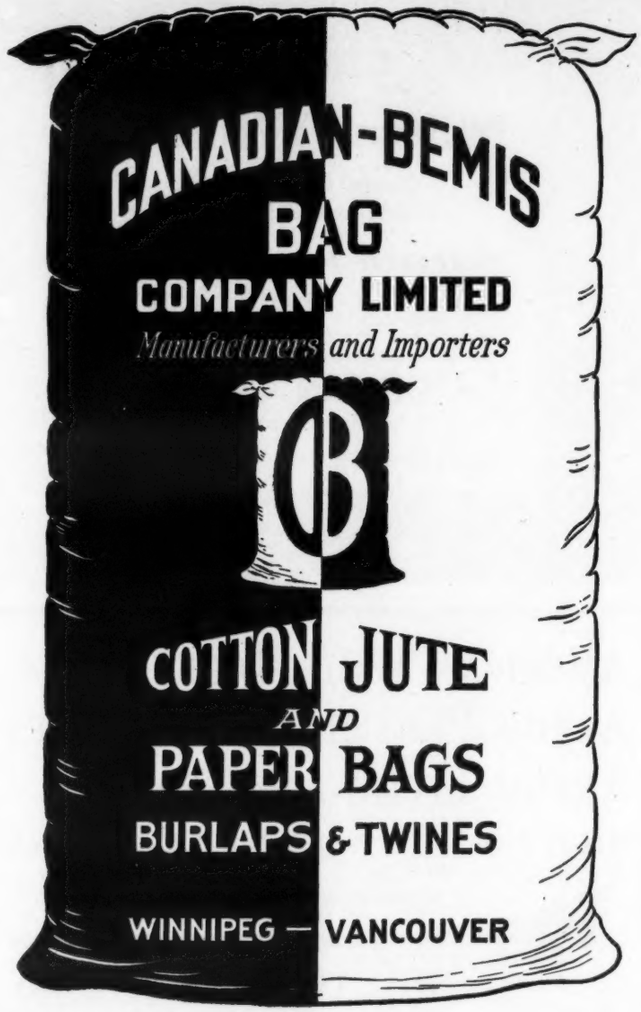
New York, N. Y.—Textile mills in the South, where approximately 80% of the nation's spindleage is located, have been unable to improve their manpower situation, but are now employing less labor today than when hostilities ceased more than three months ago, according to a survey made by the Journal of Commerce.

The survey revealed that on the average (1) the number of workers presently employed is about 2% less than the labor force on V-J Day; (2) an increase of approximately 1% has taken place in the labor force since Oct. 1, reflecting a seasonal trend; (3) second shift operations could be increased 15 to 20% if workers were available, and (4) third shift, which is operating at about 60% of the mills reporting, could be increased 30 to 40% if workers could be obtained.

The chief difficulty in obtaining help is in the preparatory stages of mill operations, it is stated. These are unskilled or semi-skilled jobs where the wage scale is low in comparison with other mill jobs and the work is hard. Production slowdowns at this level, however, affect all operations, it is pointed out.

The restlessness of new workers is also cited as a major difficulty. Employees that are hired and put through preliminary training stages frequently quit after a few days and move on to other jobs.

The turn which the manpower situation has taken in the southern textile industry since the ending of the war is causing both surprise and disappointment among mill men. The industry experienced a net loss of approximately 100,000 employees to the armed services and war work since the 1942 peak production year. It was thought with the cutback in war work, many of these workers would return to their former occupations.



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W. S. KIMPTON & SONS
Flour Millers
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Cables: "GLUTEN," Melbourne

LAKESIDE MILLING COMPANY, Ltd.
"BLOSSOM of CANADA" "YORK" "NORDIC"
Cable Address: LAKESIDE TORONTO, CANADA

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THE LEADING NAME IN CANADIAN FLOUR & CEREAL MILLING —
OGILVIE
Makers of
CANADA'S BEST FLOUR from the WORLD'S FINEST WHEAT
WHEAT THAT IS *Carefully* SELECTED, *Correctly* BLENDED AND *Really* WASHED
Look at These Celebrated Names
OGILVIE FLOUR ROYAL HOUSEHOLD
GLENORA FAMOUS
BUFFALO
—and These Famous Cereals
OGILVIE OATS WHEAT-HEARTS
BLENDIES TONIK WHEAT GERM
VITA-B WHEAT GERM CEREAL
Cable Address OGILVIE MONTREAL ALL CODES USED
The OGILVIE FLOUR MILLS COMPANY LIMITED
MONTREAL CANADA
Mills at MONTREAL FORT WILLIAM WINNIPEG EDMONTON MEDICINE HAT

Milling Wheat
From the rich fields of Nebraska
Selected for millers who make good flour
BUTLER-WELSH GRAIN CO.
OMAHA, NEBR.
Storage, 2,500,000 Bu. Phone ATlantic 2900

AMERICAN MAID FLOUR
ARROW PROTEIN CONCENTRATES
ARROW LIVESTOCK FEEDS
HIGH PROTEIN HARD WINTER WHEAT
Leaders in Domestic Quality Trade
Direct Exporters
HOUSTON MILLING CO.
Houston, Texas

Prevent TB

Buy Christmas Seals

GRIST OF GRINS

An elderly lady sat in the Union Station, tears in her eyes. A gentleman stopped and talked quietly with her. Then, lifting his hand for attention, he addressed the crowded waiting room:

"Friends, this good woman wants only enough money to take her to her relatives in Denver. I'm a poor man but I'll start the collection with a $10 bill. What will you give?"

In a few moments more than $100 was raised. With a bow he presented it to the delighted lady. A man approached the gentleman who had made the appeal.

"Hello. Aren't you John Brown?"

"Why, yes, my friend, I'm Brown."

"I thought so! And, isn't this lady your wife?"

"Yes, of course it is; and I think it's a sorry husband who won't give his wife $10 so she can take a vacation once in a while."

◆ ◆ ◆

Father (to unwelcome suitor): I don't want my daughter to be tied to a hopeless idiot all her life.

Suitor: Of course not, sir. Then I take it I have your consent?

◆ ◆ ◆

A farmer watched in amazement as his dinner guest, an army colonel, devoured two whole chickens. After dinner, as they sat on the porch, a rooster came strutting past. "By George," exclaimed the colonel, "that's a mighty proud rooster."

"He should be," the farmer replied. "He's just given two sons to the army."

◆ ◆ ◆

Sailor: Hello, Betty, can I see you tonight?

Girl: Sure thing, Herbert; come on over.

Sailor: But this isn't Herbert.

Girl: And I'm not Betty; but come on over.—The Duster, Naval Air Station, Clinton, Okla.

◆ ◆ ◆

A lady was very much pleased because her husband had called her an angel. She was not accustomed to compliments from him and asked him why he had called her an angel. "Because," he replied, "you are always up in the air, you are continually harping on something, and you never have a thing to wear."

◆ ◆ ◆

"Mommie, what becomes of an automobile when it gets too old to run any more?"

"Why, somebody sells it to your father, dearie, for a used car good as new."

◆ ◆ ◆

The woe of childhood is exemplified in the little boy who, the day before he was to begin his schooling, started crying as if his heart would break. Startled, his mother gathered him in her arms, and asked, "What's the matter, dear?"

"I gotta start school tomorrow," sobbed the youngster, "and I don't know nuthin'."

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20,000 CWTS CAPACITY
KANSAS CITY, MISSOURI
"Heart of America" FLOUR
CHICAGO OFFICE:
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ALFALFA MEAL
Ideal for Poultry Mashes
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Midland Bank, Ltd., Poultry & Princes St., London

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Successors to D. G. Van Dusen & Co.
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Broker and Merchandiser
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Members N. Y. Produce Exchange
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• INDEX OF ADVERTISERS •

"A" series of page numbers used to index advertisements appearing in Section Two of this issue.

A

Abilene Flour Mills Co. 21
Acme-Evans Co. 27
Acme Flour Mills Co. 25
Allen, James, & Co. (Belfast), Ltd. 43
Alva Roller Mills 31
Amber Milling Co. 18
Amendt Milling Co. 25a
American Bag Co. 25a
American Bakers Machinery Co. 17a
American Cyanamid & Chemical Corp. 37
American Dry Milk Institute, Inc. 7
American Flours, Inc. 7
American Machine & Foundry Co. 7
Ames Harris Neville Co. 7
Anheuser-Busch, Inc. 21a
Appraisal Service Co., Inc. 28
Archer-Daniels-Midland Co. 21
Arnold Milling Co. 28
Atkinson Milling Co. 28

B

Barnett & Record Co. 24a
Baxter, A. E., Engineering Co. 16a
Bay State Milling Co. 28
Belan, Mathew C. 27
Bemis Bro. Bag Co. 7a
Bentzen's, Mrs., Danish Cookie Co., Inc. 31
Big Jo Flour Mills 28
Black Bros. Flour Mills 28
Blair Milling Co. 28
Blake, J. H. 21
Blodgett, Frank H., Inc. 43
Borden Co. 43
Bouwman, E. & W. 25
Bowersock Mills & Power Co. 25
Bowman Dairy Co. 17a
Bowsher, N. P., Co. 43
Bradley & Baker 7
Brey & Sharpless 43
Broenniman Co., Inc. 36
Brownold, M. S., Co. 6
Brown's Hungarian Corp. 37
Buhler Mill & Elevator Co. 43
Bulsing & Heslenfeld 6
Bunge Elevator Corp. 42
Butler-Welsh Grain Co. .....

C

Cameron, John F., & Co. 39
Canadian Bag Co., Ltd. 41
Canadian-Bemis Bag Co., Ltd. 18
Canadian Mill & Elevator Co. 7
Cannon Valley Milling Co 25
Capital Flour Mills, Inc. 25
Cargill, Inc. 25
Carr, P. E. 43
Carson, Robert, & Co., Ltd. 7
Centennial Flouring Mills Co. 20a
Central Bag & Burlap Co. 36
Chandler, Arthur L., & Co. 3
Chapman & Smith Co. 16a
Chase Bag Co. 6a
Chatfield & Woods Sack Co. 28
Checkerboard Elevator Co. 36
Chelsea Milling Co. 6
Chicago, So. Shore & So. Bend R. R. 6
Chickasha Milling Co. 6
Chubb & Son 41
Church & Dwight Co., Inc. 43
Coatsworth & Cooper, Ltd. 43
Cohen, Felix 43
Colborne Mfg. Co. 43
Coleman, David, Inc. 17
Colorado Milling & Elevator Co. 5
Commander-Larabee Milling Co. 27
Consolidated Flour Mills Co. 37
Continental Grain Co. 21
Corn Products Sales Co. 43
Coventry, Sheppard & Co. 43
Crawford & Law 37
Cream of Wheat Corp. 21
Crete Mills, The 7
Crookston Milling Co. 17a
Crown Bag Co. 7
Crown Mills .....

D

Dairymen's League Co-operative Association, Inc. 2
Davis-Noland-Merrill Grain Co. 22a
Day Co. 22a
De Lisser, Andrew 42
De Stefano, Ulysses 16a
Denver Alfalfa Milling & Products Co. 7
Deutsch & Sickert Co. 24a
Diamond Crystal Salt Co., Inc. 7
Dixie-Portland Flour Co. 31
Dobry Flour Mills, Inc. 38
Dominion Flour Mills, Ltd. 24a
Doughnut Corporation of America 28
Dow Chemical Co. 24a
Duluth Universal Milling Co. 28
Duncan, Wm. C., & Co., Inc. 28
Dunwoody Institute 28
Dutchess Bakers' Machinery Corp. .....

E

Eagle Roller Mill Co. 31
Eberhardt & Simpson Grain Co. 6
Eckhart, B. A., Milling Co. 6a
Elkay Products Co. 25
Enns Milling Co. 16a
Entoleter Division, Safety Car Heating & Lighting Co., Inc. 11a
Essmueller Co. 27
Evans Milling Co. .....

F

Farmers & Merchants Milling Co. 42
Farquhar Bros. 43
Feast, C. E., & Co. 43
Federal Mill, Inc. 25
Fennell, Spence & Co. 43
Ferbo Co. 37
Finger Lakes & Hudson Flour Mills, Inc. 28
Fisher-Fallgatter Milling Co. 7
Fisher Flouring Mills Co. 8
Florelius & Ulsteen a/s 21a
Flour Mills of America, Inc. 21a
Food Research Laboratories, Inc. 42
Fort Garry Flour Mills Co., Ltd. 42
Fort Morgan Mills 8a
Franco, Francis M. 4
Freeman Food Products Co. 24a
Fulton Bag & Cotton Mills 28

G

Gallatin Valley Milling Co. 42
Garland Milling Co. 8a
General Baking Co. 4
General Mill Equipment Co. 24a
General Mills, Inc. ..... Cover
George, S., Co. 41
Gillespie Bros., Ltd. 31
Globe Milling Co. 28
Gooch Milling & Elevator Co. 42
Goodlander Mills Co. 43
Great Bend Milling Company 40
Great Star Flour Mills, Ltd. 42
Greenbank, H. J., & Co. 43
Grippeling & Verkley .....

H

Haaky Mfg. Co. 20a
Habel, Armbruster & Larsen Co. 43
Hachmeister, Inc. 42
Hamm, J. M. & C. M. 43
Hammond Bag & Paper Co. 21
Handees Co. 28a
Hardesty Milling Co. 31
Harris Bros. & Co., Ltd. 28
Hart-Bartlett-Sturtevant Grain Co., Inc. 37
Hart-Carter Co. 9a
Heide, Henry, Inc. 31
Henkel Flour Mills 42
Hoffmann-La Roche, Inc. 43
Holland Engraving Co. 21
Hookway, F. E., & Co., Ltd. 42
Horan, Hubert J. 42
Hosmer, Calvin, Stolte Co. 42
Houston Milling Co. 21a
Howie, The J. K., Co. 18
Hubbard Milling Co. 18
Hunter Milling Co. .....

I

Igleheart Bros., Inc. 18
Imbs, J. F., Milling Co. 22a
Industrial Fumigant Co., Inc. 20a
Innis, Speiden & Co. ..... Cover
International Milling Co. 21
Ismert-Hincke Milling Co. .....

J

Jaeger, Frank, Milling Co. 27
Jennison, W. J., Co. 28
Jewell, L. R., & Son 43
Johnson-Herbert & Co. 20a
Jones-Hettelsater Construction Co. 43
Joseph, I. S., Co., Inc. 43
Junction City Milling Co. .....

K

Kalamazoo Vegetable Parchment Co. 8
Kansas Flour Mills Company 19a
Kansas Milling Co. 17a
Katz, Max, Bag Co. 42
Kelly-Erickson Co. 43
Kelly Flour Co. 27
Kelly, William, Milling Co. 37
Kenser, Charles H. 13a
Kent, Percy, Bag Co., Inc. 41
Kimpton, W. S., & Sons 21
King, H. H., Flour Mills Co. 18
King Midas Flour Mills 37
King Milling Co. 43
Kipp-Kelly, Ltd. 43
Knighton, Samuel, & Sons, Inc. 42
Koerner, John E., & Co. .....

L

La Grange Mills 40
Lake of the Woods Milling Co., Ltd. 41
Lakeside Milling Co., Ltd. 25
Larrowe Mills, Inc. 43
Lever Bros. Co. 37
Lexington Mill & Elevator Co. 38
Loken & Co. 27
Long, W. E., Co. 21
Lynch, Merrill, Pierce, Fenner & Beane 38
Lyon & Greenleaf Co., Inc. 43
Lysle, J. C., Milling Co. .....

M

McConnell & Reid, Ltd. 28
McKinnon & McDonald, Ltd. 2a
McLean, W. D. 16a
McVeigh & Co. 40
Maney Milling Co. 41
Maple Leaf Milling Co., Ltd. 25
Mardorf, Peach & Co., Ltd. 18a
Marsh & McLennan, Inc. 22a
Mennel Milling Co. 7
Merck & Co., Inc. 25
Merrill, Harold A. 6
Mid-Kansas Milling Co. 36
Midland Flour Milling Co. 27
Mid-West Laboratories Co., Inc. 43
Mill Mutual Fire Prevention Bureau 43
Miner-Hillard Milling Co. 38
Minot Flour Mill Co. 43
Monsanto Chemical Co. 28
Montana Flour Mills Co. 16a
Moore-Lowry Flour Mills Co. 22a
Moore-Seaver Grain Co. 7
Morris, Cliff H., & Co. 25
Morrison Milling Co. 18a
Morrison, Wm., & Son, Ltd. 6
Moundridge Milling Co. .....

N

National Almond Products Co. 23a
National Cotton Council of America 26a
National Grain Yeast Corp. 27
Neahr, M. J., & Co. 4
Nebraska Consolidated Mills Co. 18
Nehemkis, Peter R., Sr. 43
Neill, Robert, Ltd. 25
New Century Co. 43
New Era Milling Co. 43
New Jersey Flour Mills Co. 43
Newton Milling & Elevator Co. 43
Noblesville Milling Co. 43
Norenberg & Belsheim 43
Norris Grain Co. 43
North Dakota Mill & Elevator 43
Norton, Willis, Co. 43
Northern Publishing Co. 43
Nor-Vell Sleve Co. 43
Novadel-Agene Corp. ..... Cover

O

Ogilvie Flour Mills Co., Ltd. 43
Omega Machine Co. (Division of Builders Iron Foundry) 43
Osieck & Co. .....

P

Page, Thomas, Milling Co. 43
Paniplus Company 43
Parrish & Heimbecker, Ltd. 43
Pearlstone, H. S., Co. 43
Peek Bros. 43
Pfeffer Milling Co. 43
Pfizer, Chas., & Co., Inc. 43
Pillman & Phillips 43
Pillsbury Mills, Inc. 43
Pittsburgh Plate Glass Co., Columbia Chemical Division 43
Pratt, R. C. 43
Preston-Shaffer Milling Co. 43
Prina, Frank R., Corp. 43
Procter & Gamble .....

Q

Quaker Oats Company .....

R

Raible, J. R., Co. 43
Red River Milling Co. 43
Red Star Yeast & Products Co. 43
Red Wing Milling Co. 43
Richardson, James, & Sons, Ltd. 43
Richmond Mfg. Co. 43
Riegel Paper Corp. 43
Robin Hood Flour Mills, Ltd. 43
Robinson Milling Co. 43
Robinson, Thomas, & Son, Ltd. 43
Rodney Milling Co. 43
Rogers Bros. Seed Co. 43
Ross Milling Co. 43
Ruoff, A., & Co. 43
Russell, D. T., & Baird, Ltd. 43
Russell-Miller Milling Co. 43
Russell Milling Co. 43
Rutherfurd, W. H., & Co. .....

S

St. Cloud Milling Co. 43
St. Joseph Testing Laboratories, Inc. 43
St. Lawrence Flour Mills Co., Ltd. 43
St. Regis Paper Co. 43
Saxony Mills 43
Schneider, W. H., Co. 43
Schultz, Baujan & Co. 43
Scott, Mungo, Ltd. 43
Security Milling Co., Inc. 43
Seedburo Equipment Co. 43
Shellabarger Mills 43
Sheridan Flouring Mills, Inc. 43
Shevelove, J. J. 43
Short, J. R., Milling Co. 43
Siebel Institute of Technology 43
Simonds-Shields-Theis Grain Co. 43
Skandinavisk Mel Import 43
Smith, Sidney, Flour, Feed & Grain, Ltd. 43
Southwestern Laboratories 43
Spillers, Ltd. 43
Spindler, L. G. 43
Spokane Flour Mills Co. 43
Sprake & Co. 43
Springfield Milling Corp. 43
Staley Milling Co. 43
Stanard-Tilton Division (Russell-Miller Milling Co.) 43
Standard Brands, Inc. 43
Standard Milling Co. 43
Stannard, Collins & Co. 43
Stivers, Theo. 43
Stock, F. W., & Sons, Inc. 43
Stonhard Co. 43
Stratton Grain Co. 43
Strisik, S. R., Co. 43
Sullivan & Kennedy 43
Swift & Co. .....

T

Tanner-Evans-Siney Corp. 43
Taylor, Andrew, & Co., Ltd. 43
Tennant & Hoyt Co. 43
Tension Envelope Corp. 43
Textile Bag Manufacturers Association 43
Thomas, A. Vaughan 43
Thompson, E. S. 43
Tidewater Grain Co. 43
Tobler, Ernst & Traber, Inc. 43
Toronto Elevators, Ltd. 43
Transit Grain Co. 43
Tri-State Milling Co. 43
Twin City Machine Co. .....

U

Uhlmann Grain Co. 43
Union Machinery Co. 43
Universal Mills 43
United Grain Growers, Ltd. 43
Urban, George, Milling Co. .....

V

Valier & Spies Milling Company 43
Van Den Bergh, Gebroeders 43
Van Driel, W. P., & Zonen 43
Van Dusen Harrington Co. 43
Verhoeff's Meel-Import 43
Victor Chemical Works 43
Virginia-Carolina Chemical Corp. 43
Vis, P. C., & Co. 43
Voigt Milling Co. 43
Vos, M. J., Haarlem, Holland .....

W

Wall-Rogalsky Milling Co. 43
Wallace & Tiernan Co., Inc. ..... Cover
Walnut Creek Milling Co. 43
Wamego Milling Co. 43
Watson & Philip, Ltd. 43
Watson Higgins Milling Co. 43
Weber Flour Mills Co. 43
Wesson Oil & Snowdrift Sales Co. 43
Western Assurance Co. 43
W. A. Co-operative Flour & Grain Agency 43
Western Canada Flour Mills Co., Ltd. 43
Western Milling Co. 43
Western Star Mill Co. 43
Western Waterproofing Co. 43
White, Bob 43
White & Co. 43
Whitewater Flour Mills Co. 43
Wichita Flour Mills Co. 43
Williams Bros. Co. 43
Winthrop Chemical Co., Inc. 43
Witsenberg, M., Jr. 43
Wolf Milling Co. 43
Woods Mfg. Co., Ltd. 43

A LITTLE GOES A LONG WAY!

Yes, the little sample of flour you send to our laboratories — plus the experience and technical service of your N-A Representative — goes a long way to solve your maturing, processing and enriching problems.

This sample should be a duplicate of the one you send to your mill or commercial laboratory, so that a valuable comparison can be made.

Novadel-Agene brings you not just a product — not just advice — but a complete flour service designed from technical know-how and developed by nationwide experience to give you, promptly and economically, practical answers to your problems.

NA-120

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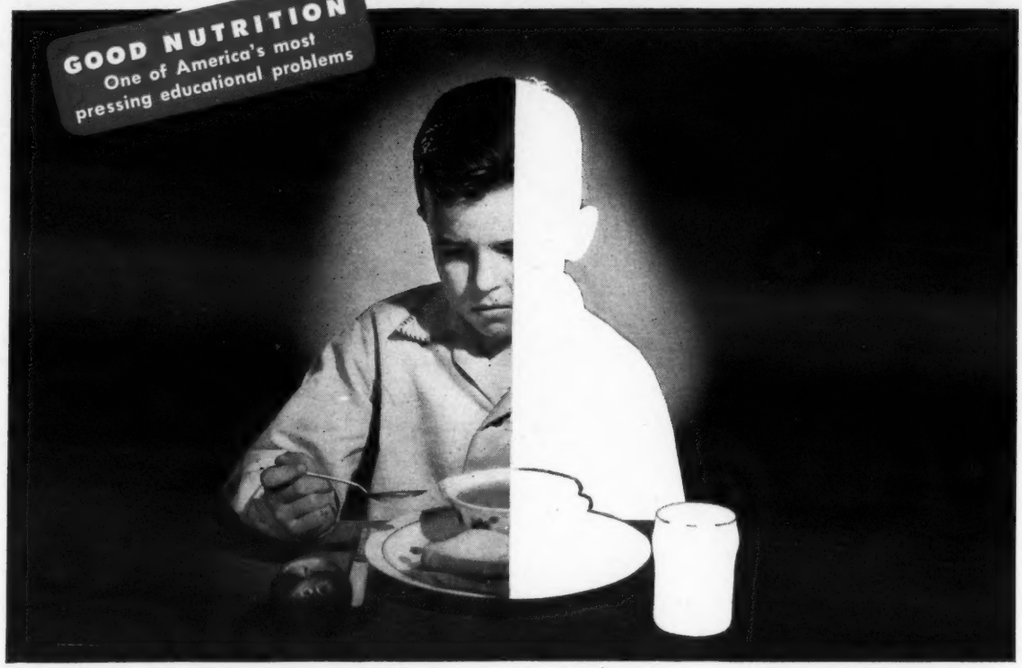

THE "HALF-THERE" LUNCH

Survey of noon meals reveals that children need "full exposure" to importance of sound eating habits.

Eating lunch on the fly . . . stuffing themselves on the wrong foods . . . skipping lunch entirely—careless eating habits such as these are what make the well-balanced lunch a comparative rarity among school children.

Of 4,165 lunches downed by high and grade school pupils in 9 typical communities, a high proportion were well below par nutritionally, according to a recent study.

Of the high school students' lunches,

82.8% ranged from poor to fair
17.2% were considered adequate.

Of the grade school pupils' lunches,

67.8% ranged from poor to fair
32.2% were considered adequate.

While the study was limited to a week-long test in a Midwest area, it is safe to assume that the situation has many a counterpart elsewhere.

The lesson is plain—American school children need to be exposed to a sound program of education in the fundamentals of nutrition.

General Mills is preparing helpful materials to aid in teaching the essentials of good nutrition. These materials, based on the latest authoritative information and perfected with the help of a committee of educators, will soon be available.

A booklet, "Aids to a Health and Nutrition Program for School and Community," describes in detail the teaching tools General Mills is preparing. A copy will be sent free on request.

General Mills, Inc.

Minneapolis, Minnesota

Enriched Flours • Restored Cereals • Vitamin Products

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EVERY DAY'S DIET SHOULD INCLUDE THESE FOODS

GREEN AND YELLOW VEGETABLES . . . some raw, some cooked, frozen or canned. At least one serving a day

ORANGES, TOMATOES, GRAPEFRUIT . . . or raw cabbage or salad greens. At least one serving a day.

POTATOES AND OTHER VEGETABLE AND FRUITS . . . raw, dried, cooked, frozen or canned. Two or more servings a day.

MILK AND MILK PRODUCTS... fluid, evaporated or dried milk. One quart (or its equivalent) a day for children and expectant or nursing mothers; one pint a day for all others.

MEAT, POULTRY, FISH OR EGGS...or dried beans, peas, nuts or peanut butter. One serving of meat, poultry or fish a day, occasionally peas or beans instead. Three or four eggs each week.

BREAD, FLOUR, CEREALS . . . natural whole-grain or enriched or restored. Three or more servings a day.

BUTTER AND FORTIFIED MARGARINE . . . use for spreads and for seasoning as you like and as supplies permit.

In addition, all growing children and all expectant or nursing mothers should be provided with 400 units a day of Vitamin D in the form of Vitamin D milk (fresh or evaporated), fish liver oil or Vitamin D concentrate

One of a series of ads appearing in educational, medical and health magazines which reports on the General Mills nutrition program and helps to establish grain product foods in their proper place in the diet.